

Art Unit:



STIC Search Report

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TO: Ralph J Gitomer
Location: CM-1 11D11
Art Unit: 1651
Monday, January 05, 2004

11B01

Cas Serial Number: 09/920263

From: Mary Jane Ruhl
Location: Biotech-Chem Library
CM1-6A06
Phone: 605-1155

maryjane.ruhl@uspto.gov

Search Notes

Examiner Gitomer,

Here are the results for your recent search request.

Please feel free to contact me if you have any questions about these results.

Thank you for using STIC services. We appreciate the opportunity to serve you.

Sincerely,

Mary Jane Ruhl
Technical Information Specialist
STIC
CM-1, Rm. 6-A-06
605-1155

=> d his ful

FILE 'REGISTRY' ENTERED AT 16:19:59 ON 05 JAN 2004

L7 E COPPER PHTHALOCYANINE/CN
1 SEA ABB=ON "COPPER PHTHALOCYANINETETRASULFONIC ACID, TETRASODI
UM SALT"/CN
E 3,7-BIS(DIMETHYLAMINO)PHENOTHIAZIN/CN
L8 E COPPER(II) PHTHALOCYANINE/CN
1 SEA ABB=ON "COPPER(II) PHTHALOCYANINE"/CN
E 1-(1-NAPHTHYLAZO)-2-NAPHTHOL/CN
E GLUCOSE/CN
L9 2 SEA ABB=ON GLUCOSE/CN

FILE 'HCAPLUS' ENTERED AT 16:23:38 ON 05 JAN 2004

L10 270 SEA ABB=ON ?REAGENT?(W)?STRIP?
L11 0 SEA ABB=ON L10 AND (?MEDIATOR?(W)?SOLUTION? OR ?OXIDIZ?(W)?AGE
NT?)
L12 10 SEA ABB=ON L10 AND (?ELECTROCHEM? OR ?OPTICAL?)
L13 70 SEA ABB=ON L10 AND ?REFLECT?
L14 12 SEA ABB=ON L13 AND ?HEMOGLOBIN?
L15 22 SEA ABB=ON L12 OR L14
L16 1 SEA ABB=ON L10 AND (L7 OR L8 OR ?PHTHALOCYANIN? OR ?PHENOTHIAZ
IN? OR ?NAPHTHYLAZO?)
L17 105 SEA ABB=ON L10 AND (L9 OR ?GLUCOSE?)
L18 19 SEA ABB=ON L17 AND ?WHOLE?(W)?BLOOD?
L19 40 SEA ABB=ON L15 OR L16 OR L18

FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO' ENTERED AT
16:32:46 ON 05 JAN 2004

L20 132 SEA ABB=ON L19
L21 107 DUP REMOV L20 (25 DUPLICATES REMOVED)
L22 1 SEA ABB=ON L21 AND ?MEMORY?
L23 0 SEA ABB=ON L21 AND (CONTROL? OR ?TEST?)(W) FLUID?
L24 49 SEA ABB=ON L21 AND ?METER?
L25 1 SEA ABB=ON L24 AND ?OXIDIZ?
L26 49 SEA ABB=ON L24 OR L22 OR L25

49 cit's from "Other d.b.s"

FILE 'HCAPLUS' ENTERED AT 16:39:21 ON 05 JAN 2004

L27 0 SEA ABB=ON L19 AND (?CONTROL? OR ?TEST?)(W)?FLUID?
L28 20 SEA ABB=ON L19 AND ?METER?
L29 0 SEA ABB=ON L28 AND ?OXIDIZ?

20 cit's from CA Plus

=> d que stat 128

L7 1 SEA FILE=REGISTRY ABB=ON "COPPER PHTHALOCYANINETETRASULFONIC
ACID, TETRASODIUM SALT"/CN
L8 1 SEA FILE=REGISTRY ABB=ON "COPPER(II) PHTHALOCYANINE"/CN
L9 2 SEA FILE=REGISTRY ABB=ON GLUCOSE/CN
L10 270 SEA FILE=HCAPLUS ABB=ON ?REAGENT?(W)?STRIP?
L12 10 SEA FILE=HCAPLUS ABB=ON L10 AND (?ELECTROCHEM? OR ?OPTICAL?)
L13 70 SEA FILE=HCAPLUS ABB=ON L10 AND ?REFLECT?
L14 12 SEA FILE=HCAPLUS ABB=ON L13 AND ?HEMOGLOBIN?
L15 22 SEA FILE=HCAPLUS ABB=ON L12 OR L14
L16 1 SEA FILE=HCAPLUS ABB=ON L10 AND (L7 OR L8 OR ?PHTHALOCYANIN?
OR ?PHENOTHIAZIN? OR ?NAPHTHYLAZO?)
L17 105 SEA FILE=HCAPLUS ABB=ON L10 AND (L9 OR ?GLUCOSE?)
L18 19 SEA FILE=HCAPLUS ABB=ON L17 AND ?WHOLE?(W)?BLOOD?
L19 40 SEA FILE=HCAPLUS ABB=ON L15 OR L16 OR L18
L28 20 SEA FILE=HCAPLUS ABB=ON L19 AND ?METER?

=> d ibib abs hitrn 128 1-20

L28 ANSWER 1 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:259874 HCAPLUS
DOCUMENT NUMBER: 132:262377
TITLE: Spectrophotometric apparatus with multiple readheads
INVENTOR(S): Howard, Willis E.; Rehm, Gary E.; Shaffer, Gerald H.
PATENT ASSIGNEE(S): Bayer Corporation, USA
SOURCE: Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 994354	A1	20000419	EP 1999-119058	19990930
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AU 9953580	A1	20000420	AU 1999-53580	19991011
AU 758263	B2	20030320		
JP 2000121443	A2	20000428	JP 1999-289425	19991012

PRIORITY APPLN. INFO.: US 1998-170270 A 19981013

AB An apparatus for inspecting a **reagent strip** having a fluid sample disposed thereon is provided with a conveyor system adapted to move the **reagent strip** from a first **reagent strip** inspection location to a second **reagent strip** inspection location, a first readhead associated with the first **reagent strip** inspection location, and a second readhead associated with the second **reagent strip** inspection location. Each of the readheads has a light source and a light detector associated therewith, each light source being adapted to illuminate the **reagent strip** at one of the **reagent strip** inspection locations and each light detector being adapted to detect light from the **reagent strip** (14) when the **reagent strip** is disposed at one of the **reagent strip** inspection locations.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:259864 HCAPLUS

DOCUMENT NUMBER: 132:262376
TITLE: Spectrophotometric apparatus with **reagent strip** detection
INVENTOR(S): Hough, David; Howard, Willis E.; Hurtle, Richard; Rehm, Gary E.
PATENT ASSIGNEE(S): Bayer Corporation, USA
SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 994343	A2	20000419	EP 1999-119077	19990930
EP 994343	A3	20000524		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000121442	A2	20000428	JP 1999-286763	19991007
AU 9953584	A1	20000420	AU 1999-53584	19991011
AU 756925	B2	20030130		

PRIORITY APPLN. INFO.: US 1998-170271 A 19981013

AB An apparatus for automatically detecting the presence of a **reagent strip** having a body fluid sample disposed thereon and for inspecting the **reagent strip** after the presence of the **reagent strip** is detected is provided with a detection system adapted to automatically detect the presence of a **reagent strip** at a **reagent strip** receiving area, a light source adapted to illuminate the **reagent strip** after the presence of the **reagent strip** at the **reagent strip** receiving area is detected, and a detector adapted to receive light from the **reagent strip** when the **reagent strip** is being illuminated by the light source. The detection system is provided with a light emitting apparatus adapted to illuminate the **reagent strip** receiving area, a detecting apparatus adapted to receive light from the **reagent strip** receiving area while the **reagent strip** receiving area is being illuminated by the light emitting apparatus and to generate a detection signal relating to the amount of light detected from the **reagent strip** receiving area, and a circuit adapted to automatically determine whether a **reagent strip** is present at the **reagent strip** receiving area based on the magnitude of the detection signal.

L28 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:251072 HCAPLUS
DOCUMENT NUMBER: 118:251072
TITLE: Dispersion to limit penetration of aqueous control solutions into a membrane
INVENTOR(S): Matzinger, David P.; Teodorczyk, Maria; Poulos, Darwin R.
PATENT ASSIGNEE(S): Lifescan, Inc., USA
SOURCE: U.S., 6 pp. Cont. of U.S. Ser. No. 530,044, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5187100	A	19930216	US 1991-795285	19911119
PRIORITY APPLN. INFO.:			US 1990-530044	19900529

AB A control solution for use with a porous **reagent strip** comprises a flexible semisolid polymer dispersed in water, e.g. polyvinyl acetate in distilled water, with appropriate control **glucose** concentration levels. This solution is useful in mimicking **whole blood** in terms of controlling and inhibiting penetration of aqueous solns. in a membrane and is useful in conjunction with porous **reagent strips** to determine compliance of the strips and **meters** to established measurement and performance criteria. A control solution containing

polyvinyl acetate, Cu **phthalocyanine** tetrasulfonic acid 4-Na salt (offset adjusting dye), Aerosil 200, Na benzoate, Na₂EDTA (stabilizer), Dow B (antifoamer), **glucose** (0.4-3.0 mg/mL), and water was tested along with a prior art control solution containing methylcellulose using a number of different **glucose reagent strip** lots and a com. **glucose meter**. The polyvinyl acetate-containing control solution performed well on porous reagent membranes strips and **glucose** testing **meters** for 0-600 mg **glucose**/dL.

IT 50-99-7, D-Glucose, biological studies
 RL: BIOL (Biological study)
 (aqueous control solution mimicking **whole blood** and containing polyvinyl acetate particles and, for **glucose** determination by test strips)

IT 50-99-7
 RL: ANST (Analytical study)
 (blood, whole, aqueous control solution containing polyvinyl acetate particles for mimicking, for **glucose** determination by test strips)

L28 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1991:531133 HCAPLUS
 DOCUMENT NUMBER: 115:131133
 TITLE: Short-term evaluation of an **electrochemical** system (ExacTech) for blood glucose monitoring
 AUTHOR(S): Ross, Dieter; Heinemann, L.; Chantelau, E. A.
 CORPORATE SOURCE: Dep. Nutr. Metab. Dis., Heinrich Heine Univ., Duesseldorf, 4000/1, Germany
 SOURCE: Diabetes Research and Clinical Practice (1990), 10(3), 281-5
 CODEN: DRCPE9; ISSN: 0168-8227
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Some 114 venous blood samples (plasma glucose ranging 2.6-30.7 mmol/L) were analyzed with a new pen-sized glucose **meter** designed for blood glucose self-monitoring working with an **electrochem.** method. Glucose readings of 3 pen-**meters** were compared with plasma glucose measurements obtained from a standard glucose oxidase method. Precision, accuracy, and clin. relevance were determined by assessment of the agreement between the 2 methods and error grid anal. The mean differences between the pen-**meters'** blood glucose readings and plasma glucose were -1.35, -1.43, and -1.56 mM, with limits of agreement (± 2 SD) of 2.2 and -4.9, 2.1 and -5.0 and 2.0, and -5.1 mM, resp. The 57 samples in the clin. relevant range, i.e., with plasma glucose concns. below 13 mmol/L showed mean differences of -0.04, -0.10, and -0.04 mM, with limits of agreement between -1.08 and 1.00 mM, resp. Error grid anal. showed that 90.7, 95.4, and 91.9% of the resp. pen-**meter**

readings fell in the zone A, i.e., gave clin. accurate results, the remaining values fell in zone B. One pen-meter broke during the study and had to be replaced. The results confirm that this new device gives accurate and reproducible measurements (faultless tech. function provided) and, compares favorably with the well-established **reagent strips** for blood glucose self-monitoring.

L28 ANSWER 5 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:220313 HCAPLUS

DOCUMENT NUMBER: 114:220313

TITLE: Optosensing of chlorine gas using a dry **reagent strip** and diffuse reflectance spectrophotometry

AUTHOR(S): Momin, S. A.; Narayanaswamy, R.

CORPORATE SOURCE: Dep. Instrum. Anal. Sci., Univ. Manchester Inst. Sci. and Technol., Manchester, M60 1QD, UK

SOURCE: Analytica Chimica Acta (1991), 244(1), 71-9

CODEN: ACACAM; ISSN: 0003-2670

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chlorine gas concns. in the range 0-5 ppm can be measured with a limit of detection of 0.043 ppm using an immobilized reagent (o-tolidine is best) and reflectance spectrophotometry. The system described utilizes a nylon tape dry reagent carrier whose change in reflectance over 10 s is probed in real time by means of an **optical** fiber.

L28 ANSWER 6 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:525286 HCAPLUS

DOCUMENT NUMBER: 109:125286

TITLE: Evaluation of blood chemistry tests using dry chemistry reagent systems in small animal practice

AUTHOR(S): De Bruijne, J. J.; Verschueren, C. P.

CORPORATE SOURCE: Fac. Diergeneeskd., Rijksuniv. Utrecht, Utrecht, 3584 CM, Neth.

SOURCE: Tijdschrift voor Diergeneeskunde (1988), 113(11), 614-23

CODEN: TIDIAY; ISSN: 0040-7453

DOCUMENT TYPE: Journal

LANGUAGE: Dutch

AB Three different systems for clin. chemical detns. by the general practitioner were evaluated. The systems Seralyzer, Kodak Ektachem DT 60, and Reflotron are based on the use of dry **reagent strips** in combination with a **reflectometer**. The principle of **reflectometry** is discussed briefly. These systems enable the practitioner to do the majority of the common chemical laboratory blood tests quickly with an acceptable degree of confidence. The present possibilities are given for each system, including the costs of instruments and tests in the Netherlands. The results of some common tests in small animal medicine were compared with standard methods in the authors' laboratory. Since in a few tests species-dependent differences were found, it is recommended that each dry chemical test should evaluate carefully for each animal species.

L28 ANSWER 7 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:142708 HCAPLUS

DOCUMENT NUMBER: 108:142708

TITLE: A dry-**reagent strip** for quantifying carbamazepine evaluated

AUTHOR(S): Croci, Danilo; Nespolo, Angelo; Tarenghi, Giordano

CORPORATE SOURCE: "C. Besta" Neurol. Inst., Milan, 20133, Italy

SOURCE: Clinical Chemistry (Washington, DC, United States)
(1988), 34(2), 388-92
CODEN: CLCHAU; ISSN: 0009-9147

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A colorimetric homogeneous immunoassay for determination of carbamazepine in blood based on the apoenzyme reactivation immunoassay system principle is described. The test, in dry-**reagent strip** format, was used with the Ames Seralyzer **reflectance photometer**. Within-run coeffs. of variation (CVs) were 3, 2.7, and 2.8% at 3, 6.1 and 12.1 mg/L, resp.; between-run CVs were 4.1, 2.7, and 1.9% at 6.0, 9.1, and 12.1 mg/L, resp. The mean anal. recovery was 99.9%. Results by this test for clin. plasma specimens compared well with those obtained by fluorescence polarization immunoassay and by liquid chromatog. Bilirubin (45 mg/L), uric acid (145 mg/L), and various anticoagulants at about 4-fold the usual concns. did not interfere with the assay. High concns. of cholesterol, triglycerides, and Hb caused slight pos. interference. Carbamazepin-10,11-epoxide cross reacted only at ≥ 5 mg/L. The test is convenient and rapid and thus is particularly useful in all clin. settings where prompt testing is needed.

L28 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:470128 HCAPLUS

DOCUMENT NUMBER: 107:70128

TITLE: Quantitative determination of phenobarbital and phenytoin by dry-phase apoenzyme reactivation immunoassay system (ARIS)

AUTHOR(S): Croci, Danilo; Nespolo, Angelo; Tarenghi, Giordano

CORPORATE SOURCE: C. Besta Neurol. Inst., Milan, Italy

SOURCE: Therapeutic Drug Monitoring (1987), 9(2), 197-202
CODEN: TDMODV; ISSN: 0163-4356

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors assessed the performance of the apoenzyme reactivation immunoassay system (ARIS) **reagent strip** tests for determination of phenobarbital (PB) and phenytoin (PHT) with the Seralyzer **reflectance photometer**. In the assay, the drug of the sample competes with an FAD-drug conjugate for binding to a specific antibody; the unbound conjugate then activates apoglucose oxidase to reconstitute glucose oxidase, whose activity is kinetically monitored by a coupled chromogenic reaction. Within-run coeffs. of variation (CVs) were $\leq 5.0\%$ of PB and $\leq 5.6\%$ for PHT; between-run CVs were $\leq 6.1\%$ for PB and $\leq 6.5\%$ for PHT. Mean anal. recoveries were 100.3% for PB and 100.2% for PHT. Test results were not significantly affected by bilirubin (5 mg/dL), Hb (25 mg/dL), triglycerides (500 mg/dL), uric acid (15 mg/dL), or elevated levels of other antiepileptic drugs. **Reagent strip** tests correlated very well with substrate-labeled fluorescent immunoassay, enzyme multiplied immunoassay technique, and gas-liquid chromatog.

L28 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:586970 HCAPLUS

DOCUMENT NUMBER: 105:186970

TITLE: Application of pattern-recognition techniques in wavelength selection for instrumentally read **reagent strips**

AUTHOR(S): Chu, Amy H.; Lopatin, William

CORPORATE SOURCE: Ames Div., Miles Lab., Inc., Elkhart, IN, 46515, USA

SOURCE: Clinical Chemistry (Washington, DC, United States)

(1986), 32(9), 1666-71
CODEN: CLCHAU; ISSN: 0009-9147

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Discriminant anal. and principal component anal. were utilized in selecting the wavelengths for monitoring, color-generating reactions involving uric acid and cholesterol in serum. The data base accumulated by a rapid-scanning **reflectance spectrophotometer** that measured **reflectance** at 16 wavelengths every 5 s after the reaction was initiated. The data were then analyzed in multidimensional space by a mainframe computer with com. statistical software packages. The wavelengths used were those that yielded the largest generalized distance between analyte concentration by discriminant anal. and the largest weighting coefficient by principal component anal. For uric acid, the ratio of **reflectance** measured at 2 wavelengths, instead of at a single wavelength, better separated the clin. significant concns. For cholesterol, the spectral region that is sensitive to the presence of interference, e.g., **Hb**, can be clearly demonstrated by the pattern generated with principal component anal.

L28 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:61427 HCAPLUS

DOCUMENT NUMBER: 104:61427

TITLE: Determination of serum theophylline by apoenzyme reactivation immunoassay system

AUTHOR(S): Plebani, Mario; Burlina, Angelo

CORPORATE SOURCE: Dep. Clin. Chem. Clin. Microsc., Osp. Civ., Padua, 35128, Italy

SOURCE: Therapeutic Drug Monitoring (1985), 7(4), 451-4

CODEN: TDMODV; ISSN: 0163-4356

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A **reagent strip** for the quant. anal. of theophylline [58-55-9] in serum or plasma is described. The strip is based on the apoenzyme reactivation immunoassay system (ARIS) technique and is intended for use with the Ames Seralyzer **reflectance photometer**. The method gave coefficient of variations at 3 theophylline levels ranging from 3.8 to 6.3% (within run) and from 2.8 to 6.9% (day to day). The regression lines obtained from the correlation studies were $y = 0.959x + 0.51$ ($n = 105$, $r = 0.9906$, $Sy/x = 0.56$) for the comparison ARIS (y) vs. Syva enzyme multiplied immunoassay (x) methods, and $y = 0.986x + 0.32$ ($n = 105$, $r = 0.9832$, $Sy/x = 0.62$) for the comparison ARIS (y) vs. Abbott TDx fluorescence polarization immunoassay (x) methods. The interference from triglycerides, **Hb**, bilirubin, and ascorbic acid, and the cross-reactivity of 8-chlorotheophylline, caffeine, 1,3-dimethyluric acid, theobromine, and 1,7-dimethylxanthine, were also investigated and discussed. The method was reliable, simple, and rapid. It provides a practicable solution for immediate detns. of theophylline.

L28 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:17271 HCAPLUS

DOCUMENT NUMBER: 104:17271

TITLE: Hemoglobin analysis on whole blood by **reflectance** photometry

AUTHOR(S): Lott, John A.; Khabbaza, Elias

CORPORATE SOURCE: Med. Cent., Ohio State Univ., Columbus, OH, 43210, USA

SOURCE: Journal of Automatic Chemistry (1985), 7(4), 197-200

CODEN: JAUCD6; ISSN: 0142-0453

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The Seralyzer **reflectance photometer**/dry **reagent strip** system (Ames) for the title determination gave clin. acceptable results when compared to the Coulter-S (Coulter Electronics Inc.) and CO-Oximeter (Instrumentation Labs.) **Hb** methods as refs. The Seralyzer method depends on the formation of metHb from **Hb** in the presence of ferricyanide, with **reflectance** measurements at 535 nm. The Seralyzer system was easy to use, simple to calibrate, required .apprx.1- min test time, was usable in the range 5-19 g **Hb**/dL, and showed no interference from bilirubin, CO, or lipemia.

L28 ANSWER 12 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:17251 HCAPLUS

DOCUMENT NUMBER: 104:17251

TITLE: Performance evaluation of reflectance **meter** for **glucose** determination by two different **reagent strips**

AUTHOR(S): Spotti, Donatella; Rocco, Cristina; Caradente, Orazio
CORPORATE SOURCE: Ist. Sci. S. Raffaele, Univ. Milano, Milan, 20132, Italy

SOURCE: Acta Diabetologica Latina (1985), 22(2), 149-58
CODEN: ADILAS; ISSN: 0001-5563

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The performance was evaluated of the **Glucometer** on whole **blood** in comparison with results obtained by a reference laboratory method on plasma. Results obtained with the **Glucometer** and 2 **reagent strips** showed good precision and reproducibility. Differences in results were obtained between the **reagent strips** and the reference method; however, data correction for hematocrit decreased the differences.

L28 ANSWER 13 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:105615 HCAPLUS

DOCUMENT NUMBER: 102:105615

TITLE: Clinical evaluation of the Seralyzer **reagent strip** system for measurement of serum theophylline

AUTHOR(S): Hughes, James; Mace, Peter F. K.

CORPORATE SOURCE: Univ. Hosp., Queens Med. Cent., Nottingham, NG7 2UH, UK

SOURCE: Clinical Chemistry (Washington, DC, United States) (1985), 31(2), 335
CODEN: CLCHAU; ISSN: 0009-9147

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Measurement of serum theophylline (I) [58-55-9] by Seralyzer **reagent strip** [the method is based on Apoenzyme Reactivation Immunoassay System (ARIS)-FAD/theophylline conjugate] was compared with HPLC anal. With the Seralyzer method, the samples were diluted with deionized water and applied to a **reagent strip**. This was inserted into Seralyzer **Reflectance Photometer** and the results read in 80 s. Serum samples from human patients received I therapy were assayed by both methods. Linear regression anal. gave the following correlation y (Seralyzer) = $1.12x - 0.87$ and $r = 0.98$. Coeffs. of variation were 4.48 and 0.8% for Seralyzer and HPLC, resp. In both methods, concentration and instrument readings were linearly related up to 60 mg/L. Bilirubin, **Hb**, or triglycerides, within a given range did not interfere with the Seralyzer assay. Caffeine at 10 mg/L appear to increase the I value by 1 mg/L.

Thus, Seralyzer assay is suitable for therapeutic monitoring of I in the blood serum.

L28 ANSWER 14 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:468749 HCAPLUS

DOCUMENT NUMBER: 101:68749

TITLE: Assessment of a **reflectance photometer** in a veterinary laboratory

AUTHOR(S): Belford, C. J.; Lumsden, J. H.

CORPORATE SOURCE: Ontario Vet. Coll., Univ. Guelph, Guelph, ON, N1G 2W1, Can.

SOURCE: Canadian Veterinary Journal (1984), 25(6), 243-6

CODEN: CNVJA9; ISSN: 0008-5286

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A portable **reflectance photometer** and dry **reagent strips** were evaluated for the determination of canine **whole blood Hb**, and total bilirubin, **glucose**, cholesterol, creatinine and urea in canine, bovine, equine, and feline sera. Creatine kinase and lactate dehydrogenase were assayed in canine, bovine, and equine sera. The following aspects of performance are reported: within-run variation determined on canine samples, between-run variation using a com. control, correlations between dry reagent and wet reagent methodol. on clin. samples, and dry reagent method serum chemical reference values for the cow, horse, and dog. A brief description of some tech. advantages and limitations is included. Tech. requirements were minimal, whereas reproducibility and accuracy compared well with the wet reagent method. The dry reagent method was suitable for determination of canine, bovine, equine, and feline serum variables as listed above.

IT 50-99-7, analysis

RL: ANT (Analyte); ANST (Analytical study)

(determination of, in serum of cattle and cats and dogs and horses by **reflectance photometry**)

L28 ANSWER 15 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:157337 HCAPLUS

DOCUMENT NUMBER: 98:157337

TITLE: The "Eyetone" blood **glucose** reflectance **colorimeter** evaluated for in vitro and in vivo accuracy and clinical efficacy

AUTHOR(S): Hay, William W., Jr.; Osberg, Iris M.

CORPORATE SOURCE: Sch. Med., University of Colorado, Denver, CO, 80262, USA

SOURCE: Clinical Chemistry (Washington, DC, United States) (1983), 29(3), 558-60

CODEN: CLCHAU; ISSN: 0009-9147

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The performance of a blood **glucose** reflectance **colorimeter** (Eyetone) was evaluated for accuracy and precision with use of Dextrostix **glucose** oxidase **reagent strips** for blood samples with known and unknown concns. of **glucose** covering the usual range of neonatal blood **glucose** (200-800 mg/L). The **meter** was calibrated and tested by research nurses and 1 clin. chemist. Unknowns were tested for accuracy and precision and compared with Beckman Astra values (plasma and calculated **whole blood**). Eyetone/Dextrostix values differed (gave lower values) from the calculated **whole-blood** values only at concns. <300 mg/L. On clin. specimens from newborn infants,

Eyetone/Dextrostix values were not different from calculated **whole-blood** values. Operator training to develop a consistent procedure was the most critical factor in achieving accurate and precise results.

L28 ANSWER 16 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1982:48528 HCAPLUS

DOCUMENT NUMBER: 96:48528

TITLE: Effect of packed cell volume on blood **glucose** estimations

AUTHOR(S): Dacombe, C. M.; Dalton, R. G.; Goldie, D. J.; Osborne, J. P.

CORPORATE SOURCE: Dep. Clin. Chem., Southmead Hosp., Bristol, UK

SOURCE: Archives of Disease in Childhood (1981), 56(10), 789-91

CODEN: ADCHAK; ISSN: 0003-9888

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of changes in packed cell volume (PCV) over a range of 20-80% on blood **glucose** (I) detns. in healthy subjects and diabetics by the Dextrostix and Reflotest **reagent strip**/reflectance **meter** methods and by the **glucose** oxidase filter paper blood spot method were examined. There was a progressive reduction in recorded blood I concentration with increasing PCV with both **reagent strip** systems, but there was no change with the filter paper **whole blood** spot method. There was good agreement between the results obtained with the latter method and the plasma I results obtained with an autoanalyzer, indicating no appreciable difference between **whole blood** and plasma I. The reason for the changes in observed I with changing PCV is unclear.

L28 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:564969 HCAPLUS

DOCUMENT NUMBER: 95:164969

TITLE: Evaluation and comparison of two microprocessor-controlled **reflectance photometers** for urinalysis by use of multi-test **reagent strips**

AUTHOR(S): Besozzi, M.

CORPORATE SOURCE: Lab. Anal. Clin., Osp. "F. del Ponte", Varese, Italy

SOURCE: Lab (Milan) (1981), 8(1), 57-60

CODEN: LABMDV; ISSN: 0390-069X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The 2 microprocessor-controlled **reflectance photometers** Clini-Tek and Urotron, for the semiautomated reading of urine dipsticks, were evaluated with respect to pH, protein, glucose, ketones, bilirubin, Hbs, erythrocytes, and nitrites detns. Both the Clini-Tek and Urotron gave the same results with regard to pH, bilirubin, and nitrites. Clini-Tek was more sensitive to proteins, Me2CO, and **Hb**, whereas Urotron was more sensitive to glucose and intact erythrocytes. There was some uncertainty with the Urotron when interpreting results at the upper limit of the normal range, but this was not the case with the Clini-Tek's digital printout. The speed of anal. was approx. double for the Urotron than for the Clini-Tek. Thus, a choice between the 2 instruments must be made on the basis of practical considerations.

L28 ANSWER 18 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1978:132925 HCAPLUS

DOCUMENT NUMBER: 88:132925

TITLE: Composition, indicator, and method for determining a

INVENTOR(S): component in a sample
 Johnstone, Katharine G.; Greyson, Jerome
 PATENT ASSIGNEE(S): Miles Laboratories, Inc., USA
 SOURCE: Belg., 26 pp.
 CODEN: BEXXAL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 852580	A1	19770718	BE 1977-175880	19770317
US 3993879	A	19761123	US 1975-561473	19750324
US 4090042	A	19780516	US 1976-667989	19760318
SE 7603548	A	19760925	SE 1976-3548	19760323
DE 2612306	A1	19761007	DE 1976-2612306	19760323
FR 2305898	A1	19761022	FR 1976-8394	19760323
CA 1051352	A1	19790327	CA 1976-248536	19760323
JP 51120212	A2	19761021	JP 1976-32366	19760324
AU 7612323	A1	19770929	AU 1976-12323	19760324
GB 1542093	A	19790314	GB 1976-11900	19760324
US 4118606	A	19781003	US 1976-743307	19761119
CS 214658	P	19820528	CS 1977-1762	19770316
HU 22254	O	19820428	HU 1977-MI610	19770317
HU 179777	B	19821228		

PRIORITY APPLN. INFO.: US 1976-667981 19760318
 US 1975-561473 19750324
 US 1976-667989 19760318

AB Anal. compns., indicators and their preparation procedures, and methods for determining components (glucose, ketones, urobilinogen, etc.) in a sample (urine) are presented. The anal. compns. include a reaction system that reacts with the component to produce a detectable response and an inhibitor system that interrupts the interaction between the reaction system and the component after a predetd. period. The indicators consist of supports in which the anal. compns. are incorporated. The method consists of contacting the sample with the indicator, incubating the support and sample for a predetd. period, and observing the detectable response. Thus, Whatman 3MM filter paper strips, previously impregnated with the anal. reaction solution Clinistix, was impregnated with a CHCl₃ solution of 10% Eastman 910 adhesive containing Me 2-cyanacrylate and dried.

The indicator strips were dipped for 3 s into urine samples with known glucose concns. (0-500 mg/dL) and then placed in a **reflectometer** set at 680 nm. No variations in the **reflectance** values were observed after 2 min. The final colors also could be differentiated by eye, and they were stable for several days-several wk depending upon storage conditions.

L28 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1977:498360 HCAPLUS

DOCUMENT NUMBER: 87:98360

TITLE: Blood **glucose** measurement with Dextrostix and Dexter system

AUTHOR(S): Oikawa, K.; Yamasaki, S.; Amano, T.; Sawada, T.; Kusunoki, T.; Kataoka, S.; Soyama, K.

CORPORATE SOURCE: Dep. Pediatr., Kyoto Prefect. Univ. Med., Kyoto, Japan

SOURCE: Kyoto-furitsu Ika Daigaku Zasshi (1977), 86(5), 323-8

CODEN: KFIZAO; ISSN: 0023-6012

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB The Dexter reflectance **meter** system was produced for use with a Dextrostix **reagent strip** for estimating blood sugar levels. The apparatus has a single **meter** scale, for **whole-blood glucose** levels in the range 10-400 mg/dL, and 2-point calibration. Blood samples were obtained from patients who had oral **glucose** tolerance or insulin tolerance tests, diabetic patients, and newborns. All samples were measured by the conventional 60 s Dextrostix-Dexter procedure. Blood was applied directly to the reagent area of the strip by a syringe. The remaining blood was analyzed by an AutoAnalyzer method. Within the range of 0-50 mg **glucose**/dL, correlation was not high (0.588) but the Dexter system was useful for rapid determination of blood **glucose**, particularly for insulin tolerance tests or neonatal hypoglycemia. In the ranges 50-100 mg/dL, 100-200 mg/dL, and 200-300 mg/dL, the correlation coeffs. were high (0.619, 0.779, 0.616, resp.). The range of 300-400 mg/dL correlation was low (0.452), but the method was useful under some conditions.

L28 ANSWER 20 OF 20 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1976:101784 HCAPLUS

DOCUMENT NUMBER: 84:101784

TITLE: Evaluation of an improved **reagent strip** system for measuring blood **glucose**

AUTHOR(S): Davis, Arthur E.

CORPORATE SOURCE: Rex Hosp., Raleigh, NC, USA

SOURCE: American Journal of Medical Technology (1976), 42(1), 18-21
CODEN: AJMTAC; ISSN: 0148-8759

DOCUMENT TYPE: Journal

LANGUAGE: English

AB By using a new, synthetic **whole-blood** control and an improved reflectance **meter**, the within-run precision of Dextrostix **Reagent Strips** for the quant. determination of blood **glucose** levels was compared with 3 common manual methods (hexokinase, o-toluidine, and **glucose** oxidase), and 1 automated method (neocuproine-AutoAnalyzer). In addition, the strip was compared on a day-to-day basis with the o-toluidine method. Dextrostix, used with the new instrument and control, provides results that compare very well with the other methods for within-run precision, and with the o-toluidine method for day-to-day results.

=> d que stat 126

L7 1 SEA FILE=REGISTRY ABB=ON "COPPER PHTHALOCYANINETETRASULFONIC
 ACID, TETRASODIUM SALT"/CN
 L8 1 SEA FILE=REGISTRY ABB=ON "COPPER(II) PHTHALOCYANINE"/CN
 L9 2 SEA FILE=REGISTRY ABB=ON GLUCOSE/CN
 L10 270 SEA FILE=HCAPLUS ABB=ON ?REAGENT?(W)?STRIP?
 L12 10 SEA FILE=HCAPLUS ABB=ON L10 AND (?ELECTROCHEM? OR ?OPTICAL?)
 L13 70 SEA FILE=HCAPLUS ABB=ON L10 AND ?REFLECT?
 L14 12 SEA FILE=HCAPLUS ABB=ON L13 AND ?HEMOGLOBIN?
 L15 22 SEA FILE=HCAPLUS ABB=ON L12 OR L14
 L16 1 SEA FILE=HCAPLUS ABB=ON L10 AND (L7 OR L8 OR ?PHTHALOCYANIN?
 OR ?PHENOTHIAZIN? OR ?NAPHTHYLAZO?)
 L17 105 SEA FILE=HCAPLUS ABB=ON L10 AND (L9 OR ?GLUCOSE?)
 L18 19 SEA FILE=HCAPLUS ABB=ON L17 AND ?WHOLE?(W)?BLOOD?
 L19 40 SEA FILE=HCAPLUS ABB=ON L15 OR L16 OR L18
 L20 132 SEA L19
 L21 107 DUP REMOV L20 (25 DUPLICATES REMOVED)
 L22 1 SEA L21 AND ?MEMORY?
 L24 49 SEA L21 AND ?METER?
 L25 1 SEA L24 AND ?OXIDIZ?
 L26 49 SEA L24 OR L22 OR L25

=> d ibib abs 126 1-49

L26 ANSWER 1 OF 49 MEDLINE on STN

ACCESSION NUMBER: 2003223893 MEDLINE

DOCUMENT NUMBER: 22630400 PubMed ID: 12746620

TITLE: [History, accuracy and precision of SMBG devices].
 Technologie et fiabilite de l'autosurveillance glycémique:
 historique et etat actuel.

AUTHOR: Dufaitre-Patouraux L; Vague P; Lassmann-Vague V

CORPORATE SOURCE: Service d'Endocrinologie Maladies Metaboliques et
 Nutrition, CHU Timone, F-13385 Marseille Cedex 05, France.

SOURCE: DIABETES AND METABOLISM, (2003 Apr) 29 (2 Pt 2) S7-14.

Ref: 24

Journal code: 9607599. ISSN: 1262-3636.

PUB. COUNTRY: France

DOCUMENT TYPE: Historical

Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)

(REVIEW, TUTORIAL)

LANGUAGE: French

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200307

ENTRY DATE: Entered STN: 20030515

Last Updated on STN: 20030709

Entered Medline: 20030708

AB Self-monitoring of blood glucose started only fifty years ago. Until then
 metabolic control was evaluated by means of qualitative urinary blood
 measure often of poor reliability. **Reagent strips**
 were the first semi quantitative tests to monitor blood glucose, and in
 the late seventies **meters** were launched on the market.
 Initially the use of such devices was intended for medical staff, but
 thanks to handiness improvement they became more and more adequate to
 patients and are now a necessary tool for self-blood glucose monitoring.
 The advanced technologies allow to develop photometric measurements but
 also more recently **electrochemical** one. In the nineties,
 improvements were made mainly in **meters'** miniaturisation,
 reduction of reaction time and reading, simplification of blood sampling
 and capillary blood laying. Although accuracy and precision concern was

in the heart of considerations at the beginning of self-blood glucose monitoring, the recommendations of societies of diabetology came up in the late eighties. Now, the French drug agency: AFSSAPS asks for a control of **meter** before any launching on the market. According to recent publications very few **meters** meet reliability criteria set up by societies of diabetology in the late nineties. Finally because devices may be handled by numerous persons in hospitals, **meters** use as possible source of nosocomial infections have been recently questioned and is subject to very strict guidelines published by AFSSAPS.

L26 ANSWER 2 OF 49 MEDLINE on STN
ACCESSION NUMBER: 2003147090 MEDLINE
DOCUMENT NUMBER: 22549186 PubMed ID: 12663586
TITLE: Accuracy of an **electrochemical** sensor for measuring capillary blood ketones by fingerstick samples during metabolic deterioration after continuous subcutaneous insulin infusion interruption in type 1 diabetic patients.
AUTHOR: Guerçi Bruno; Benichou Muriel; Floriot Michele; Bohme Philip; Fougnot Sebastien; Franck Patricia; Drouin Pierre
CORPORATE SOURCE: Service de Diabetologie, Maladies Metaboliques & Maladies de la Nutrition, CIC-INSERM, Hopital Jeanne d'Arc, Nancy, France.. b.guerçi@chu-nancy.fr
SOURCE: DIABETES CARE, (2003 Apr) 26 (4) 1137-41.
Journal code: 7805975. ISSN: 0149-5992.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 20030331
Last Updated on STN: 20031030
Entered Medline: 20031029
AB OBJECTIVE: This study was designed to test the accuracy of capillary ketonemia for diagnosis of ketosis after interruption of insulin infusion. RESEARCH DESIGN AND METHODS: A total of 18 patients with type 1 diabetes treated by external pump were studied during pump stop for 5 h. Plasma and capillary ketonemia and ketonuria were determined every hour from 7:00 A.M. (time 0 min = T0) to 12:00 P.M. (time 300 min = T300). Plasma beta-hydroxybutyrate (beta-OHB) levels were measured by an enzymatic end point spectrophotometric method, and capillary beta-OHB levels were measured by an **electrochemical** method (MediSense Optium **meter**). Ketonuria was measured by a semiquantitative test (Ketodiastix). Positive ketosis was defined by a value of ≥ 0.5 mmol/l for ketonemia and ≥ 4 mmol/l (moderate) for ketonuria. RESULTS: After stopping the pump, concentrations of beta-OHB in both plasma and capillary blood increased significantly at time 60 min (T60) compared with T0 ($P < 0.001$), reaching maximum levels at T300 (1.30 ± 0.49 and 1.23 ± 0.78 mmol/l, respectively). Plasma and capillary beta-OHB values were highly correlated ($r = 0.94$, $P < 0.0001$). For diagnosis of ketosis, capillary ketonemia has a higher sensitivity and negative predictive value (80.4 and 82.5%, respectively) than ketonuria (63 and 71.8%, respectively). For plasma glucose levels ≥ 250 mg/dl, plasma and capillary ketonemia were found to be more frequently positive (85 and 78%, respectively) than ketonuria (59%) ($P = 0.017$). The time delay to diagnosis of ketosis was significantly higher for ketonuria than for plasma ketonemia (212 ± 67 vs. 140 ± 54 min, $P = 0.0023$), whereas no difference was noted between plasma and capillary ketonemia. CONCLUSIONS: The frequency of screening for ketosis and the efficiency of detection of ketosis definitely may be improved by the use of capillary blood ketone determination in clinical

practice.

L26 ANSWER 3 OF 49 MEDLINE on STN
ACCESSION NUMBER: 2002687388 MEDLINE
DOCUMENT NUMBER: 22335387 PubMed ID: 12446482
TITLE: Quantitative evaluation of urinalysis test strips.
AUTHOR: Penders Joris; Fiers Tom; Delanghe Joris R
CORPORATE SOURCE: Department of Clinical Chemistry University Hospital Ghent,
De Pintelaan 185, B-9000 Ghent, Belgium.
SOURCE: CLINICAL CHEMISTRY, (2002 Dec) 48 (12) 2236-41.
Journal code: 9421549. ISSN: 0009-9147.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200212
ENTRY DATE: Entered STN: 20021214
Last Updated on STN: 20021217
Entered Medline: 20021210

AB BACKGROUND: Urine test strip results are generally reported in categories (i.e., ordinal scaled), but automated strip readers are now available that can report quantitative data. We investigated the possible use of these **meters** to complement flow cytometry of urine and compared **reflectance** readings with quantitative determinations of urinary glucose and microalbumin. METHODS: We compared URISYS 2400 (Roche) quantitative **reflectance** data with data from the UF-100 (Sysmex) and biochemical data for 436 nonpathologic and pathologic urine samples. RESULTS: Reproducibility of the **reflectance** signal was good for high- and low-concentration urine pools for protein (0.8% and 0.9% and 1.5% and 2.2% within and between runs, respectively), leukocyte esterase (1.1% and 1.0%; 5.1% and 1.2%), **hemoglobin** (1.7% and 1.1%; 8.9% and 1.1%) and glucose (2.1% and 0.5%; 6.5% and 2.3%). Fair agreement was obtained between UF-100 and test strip **reflectance** data for erythrocytes and **hemoglobin** ($r = -0.680$) and leukocytes and leukocyte esterase ($r = -0.688$). Higher correlations were observed for biochemical and test strip data comparing protein and albumin ($r = -0.825$) and glucose data ($r = -0.851$). The lower limits of detection for erythrocytes and leukocytes were $8 \times 10^6/L$ and $19 \times 10^6/L$, respectively. The protein test ($n = 220$) detected 86% (95% confidence interval, 78-92%) of samples with $<30 \text{ mg/L}$ albumin with a specificity of 84% (95% confidence interval, 76-91%). CONCLUSIONS: In urine test strip analysis, quantitative **hemoglobin** and leukocyte esterase **reflectance** data are complementary with flow cytometric results and glucose and albumin results.

L26 ANSWER 4 OF 49 MEDLINE on STN
ACCESSION NUMBER: 2001608907 MEDLINE
DOCUMENT NUMBER: 21539387 PubMed ID: 11683193
TITLE: Comparison of two strip test methods of **whole blood glucose** measurement in the neonatal period.
AUTHOR: Papp M; Sharief N
CORPORATE SOURCE: Neonatal Intensive Care Unit, Basildon Hospital, Essex, UK.
SOURCE: ACTA PAEDIATRICA, (2001 Sep) 90 (9) 1042-6.
Journal code: 9205968. ISSN: 0803-5253.
PUB. COUNTRY: Norway
DOCUMENT TYPE: (EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 200203
ENTRY DATE: Entered STN: 20011102
Last Updated on STN: 20020315
Entered Medline: 20020314

AB The aim of this study was to compare the performance and accuracy of the BM Strip test used in conjunction with Reflectance photometry, and the new non-wipe strip test (Advantage) against a reference plasma **glucose** method. In total, 114 newborns consecutively admitted to the Neonatal Unit over a 6 mo period were enrolled into the study. Each newborn had their venous blood **glucose** measured by the BM Strip test and Advantage **glucometer** and the venous haematocrit was also determined. Plasma **glucose** was measured in the laboratory by the hexokinase method. The mean difference between the BM Strip test and plasma **glucose** was significantly less than the corresponding value for the Advantage **glucometer** (0.312, 95% confidence interval (CI) 0.11-0.51 vs 0.766, 95% CI 0.57-0.95], although the limits of agreement between both methods and plasma **glucose** were wide. Haematocrit did not influence significantly the accuracy of either test. Conclusion: The new Advantage **glucose meter** does not offer any advantage over the BM Strip test. Owing to the wide limits of agreement of both methods compared with plasma **glucose**, their clinical value is limited in the neonatal period.

L26 ANSWER 5 OF 49 MEDLINE on STN
ACCESSION NUMBER: 2001294194 MEDLINE
DOCUMENT NUMBER: 21272174 PubMed ID: 11378622
TITLE: Oxygen effects on **glucose meter** measurements with **glucose** dehydrogenase- and oxidase-based test strips for point-of-care testing.
AUTHOR: Tang Z; Louie R F; Lee J H; Lee D M; Miller E E; Kost G J
CORPORATE SOURCE: Point-of-Care Testing Center for Teaching and Research, University of California, Davis, CA, USA.
SOURCE: CRITICAL CARE MEDICINE, (2001 May) 29 (5) 1062-70.
Journal code: 0355501. ISSN: 0090-3493.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200106
ENTRY DATE: Entered STN: 20010618
Last Updated on STN: 20010618
Entered Medline: 20010614

AB OBJECTIVES: To determine the effects of different oxygen tensions (Po2) on **glucose** measurements with **glucose** dehydrogenase (GD)-based and **glucose** oxidase (GO)-based test strips, to quantitate changes in **glucose** measurements observed with different Po2 levels, and to discuss the potential risks of oxygen-derived **glucose** errors in critical care. DESIGN: Venous blood from healthy volunteers was **tonometered** to create different oxygen tensions simulating patient arterial Po2 levels. Venous blood from diabetic patients was exposed to air to alter oxygen tensions simulating changes in Po2 during sample handling. **Whole-blood glucose** measurements obtained from these samples with six **glucose meters** were compared with reference analyzer plasma **glucose** measurements. **Glucose** differences were plotted vs. different Po2 levels to identify error trends. Error tolerances were as follows: a) within +/-15 mg/dL of the reference measurement for **glucose** levels <or=100 mg/dL; and b) within +/-15% of the reference measurement for **glucose** levels >100

mg/dL. SETTING AND SUBJECTS: Five healthy volunteers in the bench study and 11 diabetic patients in the clinical study. RESULTS: In the bench study, increases in Po2 levels decreased **glucose** measured with GO-based amperometric test strips, mainly at Po2 levels >100 torr. At nearly constant **glucose** concentrations, **glucose meter** systems showed large variations at low (39 torr) vs. high (396 torr) Po2 levels. **Glucose** measured with GD-based amperometric and GO-based photometric test strips generally were within error tolerances. In the clinical study, 31.6% (Precision PCx), 20.2% (Precision QID), and 23.0% (**Glucometer** Elite) of **glucose** measurements with GO-based amperometric test strips, 14.3% (SureStep) of **glucose** measurements with GO-based photometric test strips, and 4.6% (Accu-Chek Advantage H) and 5.9% (Accu-Chek Comfort Curve) of **glucose** measurements with GD-based amperometric test strips were out of the error tolerances. CONCLUSIONS: Different oxygen tensions do not significantly affect **glucose** measured with the GD-based amperometric test strips, and have minimal effect on GO-based photometric test strips. Increases in oxygen tension lowered **glucose** measured with GO-based amperometric test strips. We recommend that the effects of different oxygen tensions in blood samples on **glucose** measurements be minimized by using oxygen-independent test strips for point-of-care **glucose** testing in critically ill and other patients with high or unpredictable blood Po2 levels.

L26 ANSWER 6 OF 49 MEDLINE on STN
ACCESSION NUMBER: 2000491174 MEDLINE
DOCUMENT NUMBER: 20496340 PubMed ID: 11043624
TITLE: Practicality and accuracy of prehospital rapid venous blood **glucose** determination.
AUTHOR: Holstein A; Kuhne D; Elsing H G; Thiessen E; Plaschke A; Widjaja A; Vogel M Y; Egberts E H
CORPORATE SOURCE: 1st Department of Medicine and the Institute of Anesthesiology, Klinikum Lippe-Detmold, Germany..
SOURCE: Andreas.Holstein@T-Online.De
AMERICAN JOURNAL OF EMERGENCY MEDICINE, (2000 Oct) 18 (6) 690-4.
Journal code: 8309942. ISSN: 0735-6757.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200011
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001103

AB Blood **glucose** testing plays an important role in emergency medicine. Although the use of visual reagent test strips is widely established in this setting, the accuracy of reflectometric blood **glucose** determinations under emergency conditions has rarely been investigated. In a prospective study, 522 of a total of 3,217 patients undergoing emergency blood **glucose** testing had parallel blood **glucose** measurements performed using a specific enzymatic method. These 522 patients (aged 61.4 years, 54% men, 90 cases of severe hypoglycemia) had an intravenous access placed at the scene of the emergency. Venous **whole blood** from the introducer needle of the access was applied to the test strip and the **glucose** measured with a GlucoTouch **reflectometer** (LifeScan, Inc.). A blood sample from the intravenous access was then immediately collected in a monovette for subsequent **glucose** determination in a chemical laboratory (hexokinase method) within 20 to 40 minutes. The emergency

glucose measurements (mean: 7.3 mmol/L [95% confidence interval [CI] 6.9 to 7.7]; range: 0.55 to 27.7) correlated well with the reference laboratory results (Pearson's $r = .98$; linear regression analysis: slope 1.0, axial intercept 1.74). Error grid analysis also showed good agreement between corresponding measurements: zone A 96.7%, B 2.5%, C 0% and D 0.8%. The mean difference using the Bland-Altman method was 0.14 mmol/L; 2 SD 1.8 mmol/L; minimum -7.0 mmol/L; maximum 4.4 mmol/L. The accuracy of the rapid venous blood **glucose** determination by constantly changing emergency teams was high. Especially in 90 hypoglycemic patients, there were no deviations from the reference method that could have led to clinically relevant wrong decisions. The method of collecting **whole blood** directly from the venous access is simple and robust, and is independent of the hemodynamic status of the patient.

L26 ANSWER 7 OF 49 MEDLINE on STN
 ACCESSION NUMBER: 1999098497 MEDLINE
 DOCUMENT NUMBER: 99098497 PubMed ID: 9884028
 TITLE: Technical and clinical evaluation of an **electrochemistry glucose meter**: experience in a diabetes center.
 AUTHOR: Chen H S; Kuo B I; Hwu C M; Shih K C; Kwok C F; Ho L T
 CORPORATE SOURCE: Department of Medicine, Veterans General Hospital-Taipei, Taiwan, ROC.
 SOURCE: DIABETES RESEARCH AND CLINICAL PRACTICE, (1998 Oct) 42 (1) 9-15.
 Journal code: 8508335. ISSN: 0168-8227.
 PUB. COUNTRY: Ireland
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199903
 ENTRY DATE: Entered STN: 19990402
 Last Updated on STN: 19990402
 Entered Medline: 19990322

AB The Sensorex (**Metertech**, Taipei, Taiwan), an **electrochemical blood glucose meter**, is designed for self-monitoring of blood **glucose** (BG) concentrations in capillary blood through the use of an **electrochemical** test strip. The intra-assay coefficients of variation of Sensorex were 5.2, 5.4, and 4.7% at BG levels of 46, 154 and 302 mg/dl respectively. The BG concentrations tested by Sensorex were correlated well with those by YSI method (r approximately = 0.85, $P < 0.0001$). The intraclass correlation coefficients (r_I) between the results obtained by Sensorex and YSI were 0.84 in capillary blood and 0.69 in venous **whole blood**, which indicated good agreement between both methods. The Sensorex was evaluated by error grid analysis and revealed 'acceptance' results. In field test, the Sensorex results obtained by lay users were in concordance with those by trained technicians ($r_I = 0.87$). Our data show that the Sensorex **glucometer** is reliable and easy to use. We also demonstrate a practical clinical approach for the evaluation of a novel SMBG system.

L26 ANSWER 8 OF 49 MEDLINE on STN
 ACCESSION NUMBER: 1998285971 MEDLINE
 DOCUMENT NUMBER: 98285971 PubMed ID: 9622768
 TITLE: Laboratory and clinical evaluation of two **glucose meters** for the neonatal intensive care unit.
 AUTHOR: Perkins S L; Doelle H; Escares E; Forsythe J; Pronovost C; Taylor-Clapp S

CORPORATE SOURCE: Department of Laboratory Medicine, Ottawa Civic Hospital, Canada.
SOURCE: CLINICAL BIOCHEMISTRY, (1998 Mar) 31 (2) 67-71.
Journal code: 0133660. ISSN: 0009-9120.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199808
ENTRY DATE: Entered STN: 19980828
Last Updated on STN: 19980828
Entered Medline: 19980814

AB OBJECTIVE: To evaluate the analytical and clinical performance of the One Touch II and Advantage **glucose meters** for use in neonatal specimens. DESIGN AND METHODS: For the laboratory evaluation, a total of 96 umbilical cord **whole blood** specimens were analyzed on the One Touch II and/or Advantage **meters**. Samples were centrifuged after analysis on the **meters** and plasma **glucose** was determined on the Hitachi 917. For the clinical evaluation, a total of 64 infants had specimens analyzed on each of the **meters** as well as on the laboratory analyzer. RESULTS: In the laboratory and clinical evaluations, both **meters** correlated well ($r > 0.9$, $p < 0.001$) with the plasma values for the Hitachi 917. However, the mean difference between the Advantage and Hitachi 917 was lower than that of the One Touch II in both the laboratory (-0.23 vs -0.64 mmol/L) and the clinical evaluations (-0.08 vs -0.60 mmol/L). 53.1% of One Touch and 26.6% of Advantage results from the clinical study had a discrepancy of > 0.5 mmol/L from the laboratory value. CONCLUSIONS: For neonatal specimens, **glucose meters** must have good low end precision, sensitivity and accuracy. In this study, the Advantage **meter** had fewer discordant results and better correlation with the Hitachi 917. Overall, nursing and laboratory staff preferred the performance and characteristics of the Advantage **meter**.

L26 ANSWER 9 OF 49 MEDLINE on STN
ACCESSION NUMBER: 1998163118 MEDLINE
DOCUMENT NUMBER: 98163118 PubMed ID: 9504590
TITLE: Multicenter study of oxygen-insensitive handheld **glucose** point-of-care testing in critical care/hospital/ambulatory patients in the United States and Canada.
AUTHOR: Kost G J; Vu H T; Lee J H; Bourgeois P; Kiechle F L; Martin C; Miller S S; Okorodudu A O; Podczasy J J; Webster R; Whitlow K J
CORPORATE SOURCE: University of California, Davis 95616, USA.
SOURCE: CRITICAL CARE MEDICINE, (1998 Mar) 26 (3) 581-90.
Journal code: 0355501. ISSN: 0090-3493.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(MULTICENTER STUDY)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199803
ENTRY DATE: Entered STN: 19980407
Last Updated on STN: 19990129
Entered Medline: 19980326

AB OBJECTIVES: Existing handheld **glucose meters** are **glucose** oxidase (GO)-based. Oxygen side reactions can introduce oxygen dependency, increase potential error, and limit clinical use. Our primary objectives were to: a) introduce a new **glucose**

dehydrogenase (GD)-based **electrochemical** biosensor for point-of-care testing; b) determine the oxygen-sensitivity of GO- and GD-based **electrochemical** biosensor test strips; and c) evaluate the clinical performance of the new GD-based **glucose meter** system in critical care/hospital/ambulatory patients. DESIGN: Multicenter study sites compared **glucose** levels determined with GD-based biosensors to **glucose** levels determined in **whole blood** with a perchloric acid deproteinization hexokinase reference method. One site also studied GO-based biosensors and venous plasma **glucose** measured with a chemistry analyzer. Biosensor test strips were used with a handheld **glucose** monitoring system. Bench and clinical oxygen sensitivity, hematocrit effect, and precision were evaluated. SETTING: The study was performed at eight U.S. medical centers and one Canadian medical center. PATIENTS: There were 1,248 patients. RESULTS: The GO-based biosensor was oxygen-sensitive. The new GD-based biosensor was oxygen-insensitive. GD-based biosensor performance was acceptable: 2,104 (96.1%) of 2,189 **glucose meter** measurements were within ± 15 mg/dL (± 0.83 mmol/L) for **glucose** levels of ≤ 100 mg/dL (≤ 5.55 mmol/L) or within $\pm 15\%$ for **glucose** levels of > 100 mg/dL, compared with the **whole-blood** reference method results. With the GD-based biosensor, the percentages of **glucose** measurements that were not within the error tolerance were comparable for different specimen types and clinical groups. Bracket predictive values were acceptable for **glucose** levels used in therapeutic management. CONCLUSIONS: The performance of GD-based, oxygen-insensitive, handheld **glucose** testing was technically suitable for arterial specimens in critical care patients, cord blood and heelstick specimens in neonates, and capillary and venous specimens in other patients. Multicenter findings benchmark the performance of bedside **glucose** testing devices. With the new ± 15 mg/dL $\rightarrow 100$ mg/dL $\rightarrow \pm 15\%$ accuracy criterion, point-of-care systems for handheld **glucose** testing should score 95% (or better), as compared with the recommended reference method. Physiologic changes, preanalytical factors, confounding variables, and treatment goals must be taken into consideration when interpreting **glucose** results, especially in critically ill patients, for whom arterial blood **glucose** measurements will reflect systemic **glucose** levels.

L26 ANSWER 10 OF 49 MEDLINE on STN
 ACCESSION NUMBER: 1998065044 MEDLINE
 DOCUMENT NUMBER: 98065044 PubMed ID: 9401522
 TITLE: Comparison of two methods of measurement of **whole blood glucose** in the neonatal period.
 AUTHOR: Sharief N; Hussein K
 CORPORATE SOURCE: Neonatal Intensive Care Unit, Basildon Hospital, Essex, UK.
 SOURCE: ACTA PAEDIATRICA, (1997 Nov) 86 (11) 1246-52.
 Journal code: 9205968. ISSN: 0803-5253.
 PUB. COUNTRY: Norway
 DOCUMENT TYPE: (CLINICAL TRIAL)
 Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199801
 ENTRY DATE: Entered STN: 19980129
 Last Updated on STN: 19980129
 Entered Medline: 19980113
 AB The purpose of this study was to compare the performance and accuracy of the HemoCue B-Glucose photometer system and **reagent strip** tests used in conjunction with reflectance

photometry against a reference plasma **glucose** method. One hundred consecutive babies admitted to the neonatal unit over a 6-month period were enrolled in the study. Each baby had a heelprick capillary **glucose** measured by HemoCue and **reagent strip** tests. At the same time venous plasma **glucose** and haematocrit were measured. The mean difference between the **reagent strip** test and plasma **glucose** was significantly less than the corresponding value for the HemoCue (0.015 ± 1.41 vs 0.837 ± 1.565 mmol l⁻¹, mean \pm SD); however, the agreement limits between both methods and plasma **glucose** were wide. No significant effect of haematocrit was detected on either method. The HemoCue **photometer** does not offer any advantage over the widely used **reagent strip** tests in the neonatal period. However, the limits of agreement of both methods compared with plasma **glucose** are too wide to be clinically acceptable in the neonatal period.

L26 ANSWER 11 OF 49 MEDLINE on STN
ACCESSION NUMBER: 97241954 MEDLINE
DOCUMENT NUMBER: 97241954 PubMed ID: 9087010
TITLE: Comparison of two methods of bedside blood **glucose** screening in the NICU: evaluation of accuracy and reliability.
AUTHOR: Martin S; Jensen R; Daly L; Jergenson C; Johnson M B; Buell T
CORPORATE SOURCE: Sioux Valley Hospital, Sioux Falls, SD 57117-5039, USA.
SOURCE: NEONATAL NETWORK, (1997 Mar) 16 (2) 39-43.
Journal code: 8503921. ISSN: 0730-0832.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Nursing Journals
ENTRY MONTH: 199704
ENTRY DATE: Entered STN: 19970422
Last Updated on STN: 19970422
Entered Medline: 19970410

AB Bedside **whole blood glucose** screening in the NICU has been an accepted method of care for several years. **Meters** or visually read **reagent strips** are used in bedside screening, but the reliability and accuracy of these methods are not always established before they are implemented as routine practice in the NICU. A study was conducted to determine which method of bedside **whole blood glucose** screening was the more accurate: visually read Chemstrip bG **reagent strips** or the One Touch II **meter** method. The values obtained were compared with lab analysis of serum **glucose**, and a correlation study was performed to compare the accuracy and reliability of the values produced by the two methods. One hundred samples were obtained from 38 NICU infants; 63 percent of the 100 samples were compared with lab values. Results revealed that the One Touch II method was more reliable ($r = .92$) than the Chemstrip bG method ($r = .87$). Furthermore, the One Touch II results correlated better with lab values when the **meter** was not operated in the neonatal mode. This study revealed that the One Touch II method appears to provide safe and accurate screening of bedside blood **glucose** in a high-risk neonatal population.

L26 ANSWER 12 OF 49 MEDLINE on STN
ACCESSION NUMBER: 96392850 MEDLINE
DOCUMENT NUMBER: 96392850 PubMed ID: 8799638
TITLE: Influence of sample temperature on reflectance photometry and **electrochemical glucometer**

measurements.
 AUTHOR: Fazel A; Koutoubi Z; Sorg T B; Mehrotra B
 CORPORATE SOURCE: Department of Medicine, Veterans Affairs Medical Center,
 Dayton, Ohio 45428, USA.
 SOURCE: DIABETES CARE, (1996 Jul) 19 (7) 771-4.
 Journal code: 7805975. ISSN: 0149-5992.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199703
 ENTRY DATE: Entered STN: 19970327
 Last Updated on STN: 19970327
 Entered Medline: 19970318

AB OBJECTIVE: A study was conducted to determine the influence of sample temperature on manual reflectance **photometers**, automatic reflectance **photometers**, and **electrochemical glucometers**. RESEARCH DESIGN AND METHODS: Aqueous and blood-based control solutions were tested at temperatures ranging from 25 to 44 degrees C. With the Accu-Chek 3, One Touch, and Satellite G **glucometers**, multiple glucose determinations were performed on each sample. RESULTS: The results indicate that the manual reflectance photometry **glucometer** is prominently influenced by variation in sample temperature. The effect of sample temperature is greatest at high glucose levels. CONCLUSIONS: Caution may be required in the interpretation of manual reflectance photometry **glucometer** measurements in febrile or hypothermic diabetic patients.

L26 ANSWER 13 OF 49 MEDLINE on STN
 ACCESSION NUMBER: 95324149 MEDLINE
 DOCUMENT NUMBER: 95324149 PubMed ID: 7600751
 TITLE: The effect of haemolysis on blood **glucose meter** measurement.
 AUTHOR: Kilpatrick E S; Rumley A G; Rumley C N
 CORPORATE SOURCE: Department of Pathological Biochemistry, Gartnavel General Hospital, Glasgow, UK.
 SOURCE: DIABETIC MEDICINE, (1995 Apr) 12 (4) 341-3.
 Journal code: 8500858. ISSN: 0742-3071.
 PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199508
 ENTRY DATE: Entered STN: 19950822
 Last Updated on STN: 19950822
 Entered Medline: 19950807

AB A study was performed to assess the effect of varying degrees of sample haemolysis on the measurement of blood **glucose** by the Accutrend, Companion 2, ExacTech, **Glucometer II**, **Glucometer 4**, One Touch II, and Reflolux II blood **glucose meters**. Fresh venous blood was sonicated to induce complete haemolysis and then added in increasing proportions to homologous untreated blood to obtain nine samples with free haemoglobin concentrations up to 50 g l⁻¹. The Accutrend **meter** showed the only significant ($p < 0.05$) linear relationship to degree of haemolysis ($r = 0.988$, $p < 0.0001$). For every 7% of red cells lysed, the Accutrend value increased by 15%. All other **meters** gave results which were within 15% of the non-haemolysed value. However, extreme (100%) haemolysis not only affected the Accutrend (**glucose** value 108% greater than reference) but also the ExacTech (+98%), the **Glucometer II** (-32%), and the Companion 2

(-41%). Thus, unwitting use of a haemolysed sample to measure **whole blood glucose** may, with the Accutrend in particular, lead to erroneous results.

L26 ANSWER 14 OF 49 MEDLINE on STN
 ACCESSION NUMBER: 94175254 MEDLINE
 DOCUMENT NUMBER: 94175254 PubMed ID: 8129121
 TITLE: Intra-operative blood **glucose** measurements. The effect of haematocrit on **glucose** test strips.
 AUTHOR: Smith E A; Kilpatrick E S
 CORPORATE SOURCE: Department of Anaesthesia, Western Infirmary, Glasgow, Scotland, UK.
 SOURCE: ANAESTHESIA, (1994 Feb) 49 (2) 129-32.
 Journal code: 0370524. ISSN: 0003-2409.
 PUB. COUNTRY: ENGLAND: United Kingdom
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
 ENTRY MONTH: 199404
 ENTRY DATE: Entered STN: 19940420
 Last Updated on STN: 19980206
 Entered Medline: 19940414

AB Variations in haematocrit are known to affect the accuracy of **reagent strip** tests for **glucose**. We have investigated 10 patients during cardiopulmonary bypass, where intra-operative decreases in haematocrit occur. **Whole blood glucose** concentrations were measured on five occasions at 30 min intervals during the procedure using the **Glucometer II**, One Touch II and Reflolux II **meters** as well as a reference instrument (YSI Model 23 AM). Haematocrits were recorded simultaneously. Overall, for every 10% fall in haematocrit, **Glucometer II** measurements rose by 22% ($r = 0.74$, $p < 0.00001$), One Touch II measurements fell by 3% ($r = 0.44$, $p < 0.002$) and the Reflolux II measurements showed no significant variation. The One Touch II showed closer agreement to the reference (mean bias 0.3 mmol.l⁻¹ (95% between +0.86 and -0.26)) than the Reflolux II (bias 1.58 (+3.40 to -0.24)) or the **Glucometer II** (bias 3.25 (+6.18 to 0.32)). Thus, depending on the **meter** used, spuriously large intraoperative changes in blood **glucose** may seem to arise where patient haematocrit varies.

L26 ANSWER 15 OF 49 MEDLINE on STN
 ACCESSION NUMBER: 90161923 MEDLINE
 DOCUMENT NUMBER: 90161923 PubMed ID: 2305223
 TITLE: [Evaluation of Pen **meters** for blood **glucose** analysis in ambulatory diabetics].
 Evaluation des Pen-**Meters** zur Blutzuckerbestimmung bei ambulanten Diabetikern.
 COMMENT: Erratum in: Schweiz Med Wochenschr 1990 Mar 17;120(11):392
 AUTHOR: Spinass G A; Andres U R; Heinzinger T; Berger W
 CORPORATE SOURCE: Departement fur Innere Medizin, Kantonsspital Basel.
 SOURCE: SCHWEIZERISCHE MEDIZINISCHE WOCHENSCHRIFT. JOURNAL SUISSE DE MEDECINE, (1990 Feb 3) 120 (5) 125-8.
 Journal code: 0404401. ISSN: 0036-7672.
 PUB. COUNTRY: Switzerland
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: German
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199003
 ENTRY DATE: Entered STN: 19900601

Last Updated on STN: 19900601

Entered Medline: 19900322

AB A recently developed pen-sized **glucose meter** using direct **electrochemistry** to give an automatic digital readout of the blood **glucose** concentration was evaluated in 10 diabetic outpatients using it at home for 8 weeks. The pen-meter readings were compared with **whole blood glucose** results obtained in the laboratory on an ACP-**glucose** analyzer. Regression statistics with slope and intercept, respectively, were 0.96% and 0.39 mmol/l (correlation coefficient $r = 0.95$). During the first two weeks, 53% of the patient-performed pen-meter readings differed by more than 10% from the laboratory values, during week 7 and 8 only 34%. Patients' replies to a questionnaire revealed that all welcomed the pen-meter as a fast, easy to use and highly portable device for self monitoring of blood **glucose**.

L26 ANSWER 16 OF 49 MEDLINE on STN

ACCESSION NUMBER: 90096907 MEDLINE

DOCUMENT NUMBER: 90096907 PubMed ID: 2481098

TITLE: [Clinical evaluation of the Glucophot reflecting **photometer** in determining **glucose** in **whole blood**].

Klinicheskaja otsenka otrazhatel'nogo fotometra "Gliukofot" pri opredelenii gliukozy v tsel'noi krovi.

AUTHOR: Lukicheva T I; Aleksandrovskaja T N; Puzanov I K; Solov'ev L S; Dobrianskaia L D; Pivovarova S Ia

SOURCE: LABORATORNOE DELO, (1989) (11) 34-7.

Journal code: 18230140R. ISSN: 0023-6748.

PUB. COUNTRY: USSR

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: Russian

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199002

ENTRY DATE: Entered STN: 19900328

Last Updated on STN: 19960129

Entered Medline: 19900208

AB Clinical trials of the Glukofot reflecting **photometer** prototype for measuring the **whole blood glucose** in **reagent strips** have been carried out. The reproducibility has been assessed in various operations with different **glucose** concentrations. Attempts to estimate the calibration curve linearity and the accuracy with the control sera as against the **glucose** oxidase method have failed, probably because of the presence of stabilizers and inhibitors, and different viscosity of these substances as compared to **whole blood** viscosity. The rapid method has been compared to the universal methods and the neocuproin method for **glucose** measurements with the use of the AA autoanalyzer; the results obtained with these methods have coincided. The apparatus failures and approaches to improving its operation are discussed; it appears to be useful for blood **glucose** analysis in emergencies, at bedside, in ambulance cars, etc.

L26 ANSWER 17 OF 49 MEDLINE on STN

ACCESSION NUMBER: 88136132 MEDLINE

DOCUMENT NUMBER: 88136132 PubMed ID: 3342515

TITLE: A dry-reagent strip for quantifying carbamazepine evaluated.

AUTHOR: Croci D; Nespolo A; Tarenghi G

CORPORATE SOURCE: C. Besta Neurological Institute, Milan, Italy.

SOURCE: CLINICAL CHEMISTRY, (1988 Feb) 34 (2) 388-92.
Journal code: 9421549. ISSN: 0009-9147.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198803
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19900308
Entered Medline: 19880328

AB We examined a new colorimetric homogeneous immunoassay for carbamazepine based on the apoenzyme reactivation immunoassay system (ARIS) principle. The test, in dry-reagent strip format, is to be used with the Ames Seralyzer reflectance photometer. Within-run CVs (n = 20) were 3.0%, 2.7%, and 2.8% at 3.0, 6.1, and 12.1 mg/L; between-run CVs (n = 15, in 15 days) were 4.1%, 2.7%, and 1.9% at 6.0, 9.1, and 12.1 mg/L. Mean analytical recovery was 99.9 (SD 2.3)%. Results by this test (y) for clinical plasma specimens (n = 96) compared very well with those obtained by fluorescence polarization immunoassay (y = 1.01 x - 0.02, r = 0.995) and by liquid chromatography (y = 0.99 x + 0.14, r = 0.990). Bilirubin (45 mg/L), uric acid (145 mg/L), and various anticoagulants at about fourfold the usual concentrations did not interfere. High concentrations of cholesterol (4.9 g/L), triglycerides (3.8 g/L), and hemoglobin (4 g/L) caused slight positive interference. Carbamazepine-10,11-epoxide cross reacted only at greater than or equal to 5 mg/L. The two-point calibration line was validly stored for at least three weeks. Free carbamazepine also can be measured. The test is convenient and rapid (test time 80 s), and thus is particularly useful in all clinical settings where prompt testing is needed.

L26 ANSWER 18 OF 49 MEDLINE on STN
ACCESSION NUMBER: 88028425 MEDLINE
DOCUMENT NUMBER: 88028425 PubMed ID: 2959446
TITLE: Pre-clinical assessment of the performance of the Glucostix and Glucometer II blood glucose monitoring system.
AUTHOR: Chipchase D; Watts J R
CORPORATE SOURCE: Department of Chemical Pathology, Basingstoke District Hospital, Hampshire, UK.
SOURCE: DIABETIC MEDICINE, (1987 Sep-Oct) 4 (5) 493-5.
Journal code: 8500858. ISSN: 0742-3071.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198712
ENTRY DATE: Entered STN: 19900305
Last Updated on STN: 19980206
Entered Medline: 19871210

AB The Glucostix/Glucometer II blood glucose system has been evaluated in a hospital laboratory, with the purpose of assessing the suitability for use by nurses and diabetic patients. In the hands of laboratory personnel, the strips and meter gave precise results which correlated well with the laboratory plasma glucose assay, taking into account the difference between plasma and whole blood. The system was simple to use and rapid (50 seconds), and should prove useful and acceptable in the hands of non-laboratory personnel.

L26 ANSWER 19 OF 49 MEDLINE on STN
ACCESSION NUMBER: 87293176 MEDLINE
DOCUMENT NUMBER: 87293176 PubMed ID: 3303469
TITLE: Quantitative determination of phenobarbital and phenytoin
by dry-phase apoenzyme reactivation immunoassay system
(ARIS).
AUTHOR: Croci D; Nespolo A; Tarengi G
SOURCE: THERAPEUTIC DRUG MONITORING, (1987 Jun) 9 (2) 197-202.
Journal code: 7909660. ISSN: 0163-4356.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198708
ENTRY DATE: Entered STN: 19900305
Last Updated on STN: 19900305
Entered Medline: 19870828

AB We assessed the performance of the apoenzyme reactivation immunoassay system (ARIS) **reagent strip** tests for determination of phenobarbital (PB) and phenytoin (PHT) with the Seralyzer **reflectance photometer**. In the assay, the drug of the sample competes with a flavine adenine dinucleotide (FAD)-drug conjugate for binding to a specific antibody; the unbound conjugate then activates apoglucose oxidase to reconstitute glucose oxidase, whose activity is kinetically monitored by a coupled chromogenic reaction. Within-run coefficients of variation (CVs) were less than or equal to 5.0% for PB and less than or equal to 5.6% for PHT; between-run CVs were less than or equal to 6.1% for PB and less than or equal to 6.5% for PHT. Mean analytical recoveries were 100.3% for PB and 100.2% for PHT. Test results were not significantly affected by bilirubin (5 mg/dL), **hemoglobin** (25 mg/dL), triglycerides (500 mg/dL), uric acid (15 mg/dL), or elevated levels of other antiepileptic drugs. **Reagent strip** tests correlated very well with substrate-labeled fluorescent immunoassay ($r = 0.9923$ and 0.9944 for PB and PHT, respectively), enzyme multiplied immunoassay technique ($r = 0.9941$ and 0.9919), and gas-liquid chromatography ($r = 0.9980$ and 0.9960). These homogeneous competitive colorimetric immunoassays are particularly suitable for emergency use, for testing small batches of samples, wherever prompt results are needed.

L26 ANSWER 20 OF 49 MEDLINE on STN
ACCESSION NUMBER: 87171760 MEDLINE
DOCUMENT NUMBER: 87171760 PubMed ID: 2882186
TITLE: Pen-sized digital 30-second blood glucose **meter**.
AUTHOR: Matthews D R; Holman R R; Bown E; Steemson J; Watson A; Hughes S; Scott D
SOURCE: LANCET, (1987 Apr 4) 1 (8536) 778-9.
Journal code: 2985213R. ISSN: 0140-6736.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198705
ENTRY DATE: Entered STN: 19900303
Last Updated on STN: 19950206
Entered Medline: 19870514

L26 ANSWER 21 OF 49 MEDLINE on STN
ACCESSION NUMBER: 87052201 MEDLINE
DOCUMENT NUMBER: 87052201 PubMed ID: 3779982
TITLE: Laboratory assessment of three new monitors of blood

glucose: Accu-Chek II, **Glucometer** II, and Glucoscan 2000.
AUTHOR: Brooks K E; Rawal N; Henderson A R
SOURCE: CLINICAL CHEMISTRY, (1986 Dec) 32 (12) 2195-200.
Journal code: 9421549. ISSN: 0009-9147.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198701
ENTRY DATE: Entered STN: 19900302
Last Updated on STN: 19900302
Entered Medline: 19870112

AB We describe a laboratory assessment of three new monitors of blood **glucose** concentrations: the Boehringer "Accu-Chek II" (B), the Ames "**Glucometer** II" (A), and the Lifescan "Glucoscan 2000" (L). Inherent imprecision (CV) of each monitor was less than 2%. Maximum difference between individual monitors of the same type was less than or equal to 0.5 mmol/L. The volume of blood applied to the test strips is not critical, but duration of blood incubation or color development should be precise. Two types of test strips retained sufficient color 48 h after development to allow checking of the original measurement, and would be suitable as quality-control "spot" checks. Correlation coefficients for results for **whole-blood glucose** vs those for serum **glucose** (measured with the Beckman ASTRA-8) were: 0.992 (B), 0.967 (A), and 0.988 (L). Bias plots of these data showed positive bias for A (0.45 mmol/L) and L (0.17 mmol/L) in relation to serum-**glucose** measurements, but a negative bias of 0.32 mmol/L for B. Calibration solutions are not interchangeable. Although these versions of the monitors are probably not analytically superior to earlier models, they are easier to use.

L26 ANSWER 22 OF 49 MEDLINE on STN
ACCESSION NUMBER: 86299035 MEDLINE
DOCUMENT NUMBER: 86299035 PubMed ID: 3742795
TITLE: Application of pattern-recognition techniques in wavelength selection for instrumentally read **reagent strips**.
AUTHOR: Chu A Y; Lopatin W
SOURCE: CLINICAL CHEMISTRY, (1986 Sep) 32 (9) 1666-71.
Journal code: 9421549. ISSN: 0009-9147.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198610
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19861023

AB Pattern recognition techniques--discriminant analysis and principal component analysis--are utilized in selecting the wavelengths for monitoring, by **reflectance** spectroscopy, color-generating reactions involving uric acid and cholesterol in serum. The data base we used was accumulated by a rapid-scanning **reflectance spectrophotometer** that measured **reflectance** at 16 wavelengths every 5 s after the reaction was initiated. The data were then analyzed in multidimensional space mainframe computer with commercial statistical software packages. The most appropriate wavelengths were those that yielded the largest generalized distance between analyte concentration by discriminant analysis and the largest weighting

coefficient by principal component analysis. For uric acid, taking the ratio of **reflectance** measured at two wavelengths instead of at a single wavelength much better separates the clinically significant concentrations. For cholesterol, the initiated. The data were then analyzed in multidimensional space **hemoglobin**, can be clearly demonstrated y the "pattern" generated with principal component analysis. generalized distance between analyte generalized distance between analyte concentration by discriminant

L26 ANSWER 23 OF 49 MEDLINE on STN
ACCESSION NUMBER: 86098044 MEDLINE
DOCUMENT NUMBER: 86098044 PubMed ID: 3909537
TITLE: Determination of serum theophylline by apoenzyme reactivation immunoassay system.
AUTHOR: Plebani M; Burlina A
SOURCE: THERAPEUTIC DRUG MONITORING, (1985) 7 (4) 451-4.
Journal code: 7909660. ISSN: 0163-4356.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198602
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19860218

AB A **reagent strip** for the quantitative analysis of theophylline in serum or plasma was evaluated. The strip is based on the apoenzyme reactivation immunoassay system (ARIS) technique and is intended for use with the Ames Seralyzer **reflectance photometer**. The method gave CVs at three theophylline levels ranging from 3.8 to 6.3% (within run) and from 2.8 to 6.9% (day to day). The regression lines obtained from the correlation studies were $y = 0.959x + 0.51$ ($n = 105$, $r = 0.9906$, $Sy/x = 0.56$) for the comparison ARIS (y) versus Syva enzyme multiplied immunoassay (x) methods, and $y = 0.986x + 0.32$ ($n = 105$, $r = 0.9832$, $Sy/x = 0.62$) for the comparison ARIS (y) versus Abbott TDx fluorescence polarization immunoassay (x) methods. The interference from triglycerides, **hemoglobin**, bilirubin, and ascorbic acid, and the cross-reactivity of 8-chlorotheophylline, caffeine, 1,3-dimethyluric acid, theobromine, and 1,7-dimethylxanthine, were also investigated and discussed. The method was found to be reliable, simple, and rapid. It provides a practicable solution for immediate determinations of theophylline.

L26 ANSWER 24 OF 49 MEDLINE on STN
ACCESSION NUMBER: 86073146 MEDLINE
DOCUMENT NUMBER: 86073146 PubMed ID: 4072566
TITLE: Performance evaluation of reflectance **meter** for **glucose** determination by two different **reagent strips**.
AUTHOR: Spotti D; Rocco C; Carandente O
SOURCE: ACTA DIABETOLOGICA LATINA, (1985 Apr-Jun) 22 (2) 149-58.
Journal code: 0123567. ISSN: 0001-5563.
PUB. COUNTRY: Italy
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198601
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19860103

AB Serum **glucose** concentrations of 112 blood samples determined by the GOD/POD/Trinder method were compared with values obtained on **whole blood** by means of the **Glucometer** reflectance **meter** and two different **reagent strips**, Dextrostix and an experimental strip (GX 947822), in order to establish over a wide range of **glucose** concentrations, the precision and reproducibility of reflectometric methods. The two methods examined showed an excellent correlation with the reference method, particularly if data were corrected for the individual hematocrit value, and both accuracy and precision were reasonably satisfactory.

L26 ANSWER 25 OF 49 MEDLINE on STN
ACCESSION NUMBER: 84049267 MEDLINE
DOCUMENT NUMBER: 84049267 PubMed ID: 6637894
TITLE: Evaluation of ames Multistix-SG for urine specific gravity versus **refractometer** specific gravity.
AUTHOR: Adams L J
SOURCE: AMERICAN JOURNAL OF CLINICAL PATHOLOGY, (1983 Dec) 80 (6) 871-3.
Journal code: 0370470. ISSN: 0002-9173.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198312
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19831221

AB A comparison of urine specific gravity by a commercially available multiple **reagent strip** (Multistix-SG; Ames Division, Miles Laboratory) versus **refractometer** specific gravity (TS **Meter**; American **Optical** Corporation) was performed on 214 routine urine specimens. Agreement to ± 0.005 was found in 72% of the specimens ($r = 0.80$). Urine specific gravity by the Multistix-SG showed a significant positive bias at urine pHs less than or equal to 6.0 and a negative bias at urine pHs greater than 7.0 in comparison to **refractometer** specific gravity. At concentrated (specific gravity greater than or equal to 1.020) specific gravities, up to 25% of urine specimens were misclassified as not concentrated by Multistix-SG specific gravity in comparison to **refractometer** specific gravity. The additional cost of the specific gravity reagent to a multiple reagent test strip in addition to the poor performance relative to **refractometer** specific gravity leads to the conclusion that including this specific gravity methodology on a multiple **reagent strip** is neither cost effective nor clinically useful.

L26 ANSWER 26 OF 49 MEDLINE on STN
ACCESSION NUMBER: 83261151 MEDLINE
DOCUMENT NUMBER: 83261151 PubMed ID: 6347579
TITLE: Self **glucose** monitoring: a comparison of the **Glucometer**, Glucoscan, and Hypocount B.
AUTHOR: Nelson J D; Woelk M A; Sheps S
SOURCE: DIABETES CARE, (1983 May-Jun) 6 (3) 262-7.
Journal code: 7805975. ISSN: 0149-5992.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198309
ENTRY DATE: Entered STN: 19900319

Last Updated on STN: 19970203

Entered Medline: 19830923

AB Three reflectance **meters** available in Canada for **glucose** self monitoring were assessed for accuracy and reliability in determining capillary blood **glucose** compared with venous serum **glucose** assayed by the laboratory hexokinase method and to capillary **whole blood glucose** determined by the **glucose-oxidase** method on a YSI (Yellow Springs Instrument, Yellow Springs, Ohio). The readings with all three **meters** correlated with serum **glucose** rather than with **whole blood glucose**. The Ames **Glucometer** (Ames Division, Miles Laboratories, Rexdale, Ontario, Canada) was found to have the best predictive value over the full range of serum **glucoses** from 30 to 399 mg/dl. The Lifescan Glucoscan (Lifescan Inc., Mountainview, California), although reading satisfactorily in the range 30-180 mg/dl, significantly underestimated the capillary **glucose** at values greater than 180 mg/dl. The Hypoguard Hypocount B (Hypoguard Ltd., Suffolk, England) on the other hand read consistently high in the range 30-99 mg/dl but read satisfactorily over the range 100-399 mg/dl. All three methods, however, had inherent limitations that must be taken into account in their clinical application.

L26 ANSWER 27 OF 49 MEDLINE on STN

ACCESSION NUMBER: 83209071 MEDLINE

DOCUMENT NUMBER: 83209071 PubMed ID: 6343020

TITLE: Evaluation of two methods of self blood **glucose** monitoring by trained insulin-dependent diabetic adolescents outside the hospital.

AUTHOR: Schiffrin A; Desrosiers M; Belmonte M

SOURCE: DIABETES CARE, (1983 Mar-Apr) 6 (2) 166-9.

Journal code: 7805975. ISSN: 0149-5992.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198307

ENTRY DATE: Entered STN: 19900319

Last Updated on STN: 19900319

Entered Medline: 19830715

AB We studied the accuracy of the Chemstrip bG and **Glucometer** systems in the self-monitoring of blood **glucose** by trained adolescents. The determinations were done at home with simultaneous collection of **whole blood** into capillary tubes (Sarstedt) which were later analyzed by a **glucose-oxidase** analyzer (Beckman Instruments). In both cases, there was an excellent correlation between laboratory concentrations and Chemstrip bG ($r = 0.96$, P less than 0.001) and **Glucometer** ($r = 0.96$, P less than 0.001). Comparisons made at 8 mo remained with the same degree of accuracy. There was a trend toward greater deviation with higher plasma **glucose** values. Well-trained patients can achieve sufficient accuracy to permit the use of either of the methods tested with similar results.

L26 ANSWER 28 OF 49 MEDLINE on STN

ACCESSION NUMBER: 83129949 MEDLINE

DOCUMENT NUMBER: 83129949 PubMed ID: 6337745

TITLE: The "eyetone" blood **glucose** reflectance **colorimeter** evaluated for in vitro and in vivo accuracy and clinical efficacy.

AUTHOR: Hay W W Jr; Osberg I M

SOURCE: CLINICAL CHEMISTRY, (1983 Mar) 29 (3) 558-60.

Journal code: 9421549. ISSN: 0009-9147.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198304
ENTRY DATE: Entered STN: 19900318
Last Updated on STN: 19900318
Entered Medline: 19830407

AB We evaluated the performance of a blood **glucose** reflectance **colorimeter** ("Eyetone," Ames Co.) for accuracy and precision with use of "Dextrostix" (Ames Co.) **glucose** oxidase **reagent strips** for blood samples with known and unknown concentrations of **glucose** covering the usual range of neonatal blood **glucose** (200-800 mg/L). The **meter** was calibrated and tested by research nurses and one clinical chemist. Five unknowns were tested for accuracy and precision (56-92 determinations per unknown) and compared with Beckman Astra values (plasma and calculated **whole blood**). Eyetone/Dextrostix values differed (gave lower values) from the calculated **whole-blood** values only at concentrations less than 300 mg/L. On 258 clinical specimens from newborn infants, Eyetone/Dextrostix values were not different from calculated **whole-blood** values (p less than 0.05, $r = 0.80$). Operator training to develop a consistent procedure was the most critical factor in achieving accurate and precise results.

L26 ANSWER 29 OF 49 MEDLINE on STN
ACCESSION NUMBER: 83071678 MEDLINE
DOCUMENT NUMBER: 83071678 PubMed ID: 7148757
TITLE: Comparative analysis of four methods for rapid **glucose** determination in neonates.
AUTHOR: Perelman R H; Gutcher G R; Engle M J; MacDonald M J
SOURCE: AMERICAN JOURNAL OF DISEASES OF CHILDREN, (1982 Dec) 136 (12) 1051-3.
Journal code: 0370471. ISSN: 0002-922X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198301
ENTRY DATE: Entered STN: 19900317
Last Updated on STN: 19900317
Entered Medline: 19830107

AB As an important aspect of newborn care, the rapid assessment of **glucose** homeostasis is often accomplished by a **glucose** oxidase-peroxidase chromagen test strip method, either alone or with a reflectance **colorimeter**. The precision of these techniques has been established, but few studies have determined accuracy in an intensive care setting. We performed the following study. During the time of routine heelstick blood sampling, the nurses collected 90 complete study sets for **glucose** analysis from 43 neonates. Dextrostix, Ames **Meter**, Chemstrip bG, and Stat Tek **Meter** determinations were performed according to manufacturers' instructions. Concurrent determination of blood **glucose** level by a **glucose** analyzer (Beckman) served as a standard for comparison. There was no significant difference in estimation of true blood **glucose** concentration among the rapid methods tested. The marked variability of results suggests only modest accuracy in estimating **whole blood glucose** concentration when employed in the routine neonatal clinical setting. These data indicate that the results from

rapid blood **glucose** estimation techniques require confirmation by conventional laboratory methods prior to therapeutic intervention.

L26 ANSWER 30 OF 49 MEDLINE on STN
ACCESSION NUMBER: 82057572 MEDLINE
DOCUMENT NUMBER: 82057572 PubMed ID: 7300721
TITLE: Evaluation of home **glucose** measuring devices.
AUTHOR: Dean B; North S E; Harrison L G; Martin F I
SOURCE: MEDICAL JOURNAL OF AUSTRALIA, (1981 Aug 22) 2 (4) 197-200.
Journal code: 0400714. ISSN: 0025-729X.
PUB. COUNTRY: Australia
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198201
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19900316
Entered Medline: 19820128

AB A large number of **glucose**-monitoring systems suitable for home use are now available. The Glucochek, an early model (Mk I) and a later (Mk II), the Stan Clark RAHC, the **Glucometer**, and 20-800 BM glycemic strips were evaluated with regard to accuracy, precision, model variability and operator variability before a particular system was recommended for patient use. **Whole blood glucose**, on samples taken in the Diabetic Clinic of The Royal Melbourne Hospital, Melbourne, was measured with the system under test and in the Biochemistry Department. Accuracy was indicated by the mean of the differences between the two results, and precision by the standard deviation of these differences-the closer these results to zero, the better the system. The 20-800 BM Glycemia strips gave the best results in the hands of an experienced operator, but showed the greatest interoperator differences. These differences decreased when a machine-based system was employed. The Glucochek Mk I did not perform satisfactorily. All the systems tested showed a marked decrease in accuracy and precision when blood **glucose** levels were greater than 15.0 mmol/L. These results show that a machine is not a necessary part of a home **glucose**-monitoring system; that patients on home **glucose**-monitoring must be trained and their results checked against a reference method initially and, ideally, at regular intervals; that home **glucose**-monitoring in patients with marked hyperglycaemia unreliable.

L26 ANSWER 31 OF 49 MEDLINE on STN
ACCESSION NUMBER: 81246022 MEDLINE
DOCUMENT NUMBER: 81246022 PubMed ID: 6942295
TITLE: Self-monitoring of blood **glucose**: an evaluation of the BM test glycemic 20-800 system.
AUTHOR: Scott R S
SOURCE: NEW ZEALAND MEDICAL JOURNAL, (1981 May 27) 93 (684) 340-1.
Journal code: 0401067. ISSN: 0028-8446.
PUB. COUNTRY: New Zealand
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198109
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19900316
Entered Medline: 19810925

AB Concentrations of **whole blood glucose** were measured using two different **glucose** oxidase impregnated

test-strips. The recordings obtained by one observer with Dextrostix were compared with those recorded by an independent observer using BM Test Glycemie 20-800 strips. Dextrostix need a reflectance **meter** (Ames-Eyetone or Hypocount) for accurate quantitation whereas the BM Test Glycemie 20-800 strips can be read by eye alone. These two semi-quantitative methods for self-monitoring of blood **glucose** gave similar results over the range 2.2 to 22.0 mmol **glucose** per litre. The BM Test Glycemie 20-800 strips however are technically easier to use than the Dextrostix in that there is less error if the operator fails to comply exactly with instructions regarding exposure time to the drop of blood. They furthermore eliminate the need for a reflectance **meter**.

L26 ANSWER 32 OF 49 MEDLINE on STN
ACCESSION NUMBER: 80255752 MEDLINE
DOCUMENT NUMBER: 80255752 PubMed ID: 7402806
TITLE: Erroneously high Dextrostix values caused by isopropyl alcohol.
AUTHOR: Grazaitis D M; Sexson W R
SOURCE: PEDIATRICS, (1980 Aug) 66 (2) 221-3.
Journal code: 0376422. ISSN: 0031-4005.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198010
ENTRY DATE: Entered STN: 19900315
Last Updated on STN: 19980206
Entered Medline: 19801027

AB Glucose oxidase peroxidase chromogen reagent (Dextrostix) in combination with the Eyetone **colorimeter** has become increasingly popular in the rapid detection of hypoglycemic states in the newborn. Although the reliability of this system is well documented, there are several factors which can compromise the accuracy of the procedure. One such problem is the glucose reading given after a blood-alcohol combination is tested. By decreasing the light reflected from the strip, the **optical** electrical interpretation of the Dextrostix is altered by alcohol such that there is an apparent increase in the glucose level as read by the eyetone **meter**.

L26 ANSWER 33 OF 49 MEDLINE on STN
ACCESSION NUMBER: 79133283 MEDLINE
DOCUMENT NUMBER: 79133283 PubMed ID: 423536
TITLE: **Whole blood glucose**
determination in dogs using dextrostix and the eyetone reflectance **colorimeter**.
AUTHOR: Church D B; Watson A D
SOURCE: JOURNAL OF SMALL ANIMAL PRACTICE, (1979 Mar) 20 (3) 163-8.
Journal code: 0165053. ISSN: 0022-4510.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197905
ENTRY DATE: Entered STN: 19900315
Last Updated on STN: 19900315
Entered Medline: 19790526

L26 ANSWER 34 OF 49 MEDLINE on STN
ACCESSION NUMBER: 77041609 MEDLINE

DOCUMENT NUMBER: 77041609 PubMed ID: 983798
TITLE: Serum **glucose** determination with dextrostix and the eyetone reflectance **meter**.
AUTHOR: Hornnes P; Kuhl C
SOURCE: ACTA MEDICA SCANDINAVICA, (1976) 200 (4) 297-9.
Journal code: 0370330. ISSN: 0001-6101.
PUB. COUNTRY: Sweden
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 197612
ENTRY DATE: Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19761223

AB A simple, modified procedure for the Dextrostix-Eyetone system has been evaluated in order to enable the system to measure the concentration of **glucose** in serum as well as in **whole blood**. A reduction of the ordinary time of reaction on the Dextrostix from 60 to 45 sec gave serum **glucose** determinations by the Dextrostix-Eyetone system that correlated almost perfectly with those obtained by a specific conventional laboratory procedure. Thus, the coefficient of correlation was 0.99 and the regression line very close to the ideal line. As the modification is very simple and does not involve any changes in the adjustment of the instrument, it is recommendable in all cases where only serum samples are available.

L26 ANSWER 35 OF 49 MEDLINE on STN

ACCESSION NUMBER: 77012042 MEDLINE
DOCUMENT NUMBER: 77012042 PubMed ID: 967336
TITLE: [Clinical applicability of an enzyme micromethod for the rapid determination of blood sugar].
Applicabilita clinica di un micrometodo enzimatico per la determinazione rapida della glicemia.
AUTHOR: Maj F; Cristini P; Baraldi B; Angeli G
SOURCE: MINERVA MEDICA, (1976 Sep 1) 67 (40) 2605-9.
Journal code: 0400732. ISSN: 0026-4806.
PUB. COUNTRY: Italy
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Italian
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197611
ENTRY DATE: Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19761121

AB The clinical applicability of an enzymatic micromethod for the fast determination of glycaemia is discussed. The method is based on the use of an **optical reflectometer** for the quantitative reading of the variation in colour intensity of specific reactive strips for the semi-quantitative evaluation of blood glucose. Thanks to the method's rapidity and simplicity, it can be used for mass screening and is also very useful for the routine investigations of Diabetologic Centres. It is also invaluable for the identification of emergency clinical situations.

L26 ANSWER 36 OF 49 MEDLINE on STN

ACCESSION NUMBER: 76109191 MEDLINE
DOCUMENT NUMBER: 76109191 PubMed ID: 1247025
TITLE: Evaluation of an improved **Reagent Strip** system for measuring blood **glucose**.
AUTHOR: Davis A E

SOURCE: AMERICAN JOURNAL OF MEDICAL TECHNOLOGY, (1976 Jan) 42 (1)
48-51.
Journal code: 0370505. ISSN: 0002-9335.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197603
ENTRY DATE: Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19760324

AB Using a new, synthetic **whole-blood** control and an improved reflectance **meter**, the within-run precision of Dextrostix **Reagent Strips** for quantitative determination of blood-**glucose** levels is compared with three common manual methods (hexokinase, o-toluidine, and **glucose** oxidase), and one automated method (neocuproine-AutoAnalyzer). In addition, the strip is compared on a day-to-day basis with the o-toluidine method. Dextrostix, used with the new instrument and control, provides results that compare very well with the other methods for within-run precision, and with the o-toluidine method for day-to-day results.

L26 ANSWER 37 OF 49 MEDLINE on STN
ACCESSION NUMBER: 75221971 MEDLINE
DOCUMENT NUMBER: 75221971 PubMed ID: 1155221
TITLE: Dipping procedure for blood **glucose** determination with Dextrostix and the Eyetone reflectance **meter**. Assessment of a practical technique.
AUTHOR: Kuhl C
SOURCE: ACTA MEDICA SCANDINAVICA, (1975 Jun) 197 (6) 467-9.
Journal code: 0370330. ISSN: 0001-6101.
PUB. COUNTRY: Sweden
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 197511
ENTRY DATE: Entered STN: 19900310
Last Updated on STN: 19900310
Entered Medline: 19751105

AB A dipping procedure for blood **glucose** determination with the Dextrastix-Eyetone system has been evaluated. The procedure involves the immersion of the Dextrostix reagent area for 1 min in a tube of **whole blood** followed by wash; blotting and reading as in the regular procedure. Sixty-five blood samples, covering a wide **glucose** concentration range, were estimated for their **glucose** content in random order both by the dipping procedure and a conventional Dextrostix-Eyetone procedure. An almost perfect agreement between the two methods was found, the coefficient of correlation being 0.99 and the regression line very close to the ideal line. The presence of a Dextrostix reagent area in the blood was found to bring about glycolysis. Except at high blood **glucose** levels, this glycolysis, however, was insignificant if the strip was correctly removed after 1 min. The dipping procedure overcomes the main technical problem of conventional procedures: the inconsistency of the drop application on the reagent area. As it is easy to perform and a reliable alternative to conventional procedures, it is recommendable in all cases where blood samples are available.

L26 ANSWER 38 OF 49 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:362971 BIOSIS

DOCUMENT NUMBER: PREV200300362971
TITLE: History, accuracy and precision of SMBG devices.
Original Title: Technologie et fiabilite de
l'autosurveillance glycémique: Historique et état actuel..
AUTHOR(S): Dufaitre-Patouraux, L. [Reprint Author]; Vague, P. [Reprint
Author]; Lassmann-Vague, V. [Reprint Author]
CORPORATE SOURCE: Service d'Endocrinologie Maladies Métaboliques et
Nutrition, CHU Timone, F-13385, Marseille Cedex 05, France
SOURCE: Diabetes and Metabolism, (April 2003) Vol. 29, No. 2 Cahier
2, pp. 2S7-2S14. print.
ISSN: 1262-3636.
DOCUMENT TYPE: Article
General Review; (Literature Review)
LANGUAGE: French
ENTRY DATE: Entered STN: 6 Aug 2003
Last Updated on STN: 6 Aug 2003

AB Self-monitoring of blood glucose started only fifty years ago. Until then metabolic control was evaluated by means of qualitative urinary blood measure often of poor reliability. **Reagent strips** were the first semi quantitative tests to monitor blood glucose, and in the late seventies **meters** were launched on the market. Initially the use of such devices was intended for medical staff, but thanks to handiness improvement they became more and more adequate to patients and are now a necessary tool for self-blood glucose monitoring. The advanced technologies allow to develop photometric measurements but also more recently **electrochemical** one. In the nineties, improvements were made mainly in **meters'** miniaturisation, reduction of reaction time and reading, simplification of blood sampling and capillary blood laying. Although accuracy and precision concern was in the heart of considerations at the beginning of self-blood glucose monitoring, the recommendations of societies of diabetology came up in the late eighties. Now, the French drug agency: AFSSAPS asks for a control of **meter** before any launching on the market. According to recent publications very few **meters** meet reliability criteria set up by societies of diabetology in the late nineties. Finally because devices may be handled by numerous persons in hospitals, **meters** use as possible source of nosocomial infections have been recently questioned and is subject to very strict guidelines published by AFSSAPS.

L26 ANSWER 39 OF 49 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1990:258556 BIOSIS
DOCUMENT NUMBER: PREV199090000642; BA90:642
TITLE: CLINICAL ASSESSMENT OF THE GLUKOFOT REFLECTING
PHOTOMETER IN MEASURING WHOLE
BLOOD GLUCOSE.
AUTHOR(S): LUKICHEVA T I [Reprint author]; ALEKSANDROVSKAYA T N;
PUZANOV I I; SOLOV'EV L S; DOBRYANSKAYA L D; PIVOVAROV S YA
CORPORATE SOURCE: IM SECHENOV FIRST MOSC MED INST, MOSCOW, USSR
SOURCE: Laboratornoe Delo, (1990) No. 11, pp. 34-37.
CODEN: LABDAZ. ISSN: 0023-6748.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: RUSSIAN
ENTRY DATE: Entered STN: 5 Jun 1990
Last Updated on STN: 6 Jun 1990

AB Clinical trials of the Glukofot reflecting **photometer** prototype for measuring the **whole blood glucose** in **reagent strips** have been carried out. The reproducibility has been assessed in various operations with different **glucose** concentrations. Attempts to estimate the calibration

curve linearly and the accuracy with the control sera as against the **glucose** oxidase method have failed, 'probably because of the presence of stabilizers and inhibitors, and different viscosity of these substances as compared to **whole blood** viscosity. The rapid method has been compared to the universal methods and the neocuproin method for **glucose** measurements with the use of the AA autoanalyzer; the results obtained with these methods have coincided. The apparatus failures and approaches to improving apparatus failures and approaches to improving its operation are discussed; it appears to be useful for blood **glucose** analysis in emergencies, at bedside, in ambulance cars, etc.

L26 ANSWER 40 OF 49 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1986:354672 BIOSIS

DOCUMENT NUMBER: PREV198631059600; BR31:59600

TITLE: DETERMINATION OF **GLUCOSE** IN **WHOLE BLOOD** WITH GLUCOSTIX **REAGENT STRIPS**.

AUTHOR(S): SHERWOOD M [Reprint author]; HINNEFELD S; STROM-JENSEN P; LICHATOWICH D; GANSER N; WARCHAL M E; MECKLENBURG G

CORPORATE SOURCE: DIABETES R AND D LAB, AMES DIVISION, MILES LAB, INC, ELKHART, INDIANA 46515, USA

SOURCE: Clinical Chemistry, (1986) Vol. 32, No. 6, pp. 1119. Meeting Info.: JOINT MEETING OF THE AMERICAN ASSOCIATION FOR CLINICAL CHEMISTRY AND THE CANADIAN SOCIETY OF CLINICAL CHEMISTS, CHICAGO, ILL., USA, JULY 13-18, 1986. CLIN CHEM. CODEN: CLCHAU. ISSN: 0009-9147.

DOCUMENT TYPE: Conference; (Meeting)

FILE SEGMENT: BR

LANGUAGE: ENGLISH

ENTRY DATE: Entered STN: 30 Aug 1986

Last Updated on STN: 30 Aug 1986

L26 ANSWER 41 OF 49 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 83113625 EMBASE

DOCUMENT NUMBER: 1983113625

TITLE: The 'eyetone' blood **glucose** reflectance **colorimeter** evaluated for in vitro and in vivo accuracy and clinical efficacy.

AUTHOR: Hay Jr. W.W.; Osberg I.M.

CORPORATE SOURCE: Dep. Pediatr., Univ. Colorado Sch. Med., Denver, CO 80262, United States

SOURCE: Clinical Chemistry, (1983) 29/3 (558-560).

CODEN: CLCHAU

COUNTRY: United States

DOCUMENT TYPE: Journal

FILE SEGMENT: 029 Clinical Biochemistry

003 Endocrinology

LANGUAGE: English

AB We evaluated the performance of a blood **glucose** reflectance **colorimeter** ('Eyetone', Ames Co.) for accuracy and precision with use of 'Dextrostix' (Ames Co.) **glucose** oxidase **reagent strips** for blood samples with known and unknown concentrations of **glucose** covering the usual range of neonatal blood **glucose** (200-800 mg/L). The **meter** was calibrated and tested by research nurses and one clinical chemist. Five unknowns were tested for accuracy and precision (56-92 determinations per unknown) and compared with Beckman Astria values (plasma and calculated **whole blood**). Eyetone/Dextrostix values differed (gave lower values) from the calculated

whole-blood values only at concentrations < 300 mg/L. On 258 clinical specimens from newborn infants, Eytone/Dextrostix values were not different from calculated **whole-blood** values ($p < 0.05$, $r = 0.80$). Operator training to develop a consistent procedure was the most critical factor in achieving accurate and precise results.

L26 ANSWER 42 OF 49 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN

ACCESSION NUMBER: 78082812 EMBASE
DOCUMENT NUMBER: 1978082812
TITLE: Cerebrospinal fluid **glucose** measurements with Dextrostix and reflectance **meter**.
AUTHOR: Penn D.; Williams P.R.; Adair R.M.
CORPORATE SOURCE: Dept. Ped., William Beaumont Hosp., Royal Oak, Mich. 48072, United States
SOURCE: Journal of Pediatrics, (1977) 90/5 (771-773).
CODEN: JOPDAB
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 007 Pediatrics and Pediatric Surgery
008 Neurology and Neurosurgery
029 Clinical Biochemistry
LANGUAGE: English

AB Dextrostix **reagent strip** determinations of **whole blood glucose** by **reflectometer** have been shown to have excellent correlation with conventional laboratory techniques over various concentrations (10 to 400 mg/dl). This method of estimation of blood **glucose** has gained wide clinical acceptance because it is rapid, accurate, and requires small samples of blood. Attempts to utilize the technique with cerebrospinal fluid, however, have been unsatisfactory. Suggested modifications have proved to be cumbersome. The authors describe here a convenient modification of the Dextrostix technique that provides a rapid and accurate estimation of **glucose** concentration in CSF.

L26 ANSWER 43 OF 49 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2000-285028 [25] WPIDS
DOC. NO. NON-CPI: N2000-214652
DOC. NO. CPI: C2000-086047
TITLE: Spectrophotometric apparatus for performing tests on body fluid samples, especially urine, comprises a method of analyzing for **reagent strip** using readheads.
DERWENT CLASS: B04 J04 S03
INVENTOR(S): HOWARD, W E; REHM, G E; SHAFFER, G H
PATENT ASSIGNEE(S): (FARB) BAYER CORP; (MILE) MILES LAB INC
COUNTRY COUNT: 29
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 994354	A1	20000419	(200025)*	EN	26
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
AU 9953580	A	20000420	(200029)		
JP 2000121443	A	20000428	(200032)		17
CA 2281159	A1	20000413	(200037)	EN	
US 6180409	B1	20010130	(200108)		
AU 758263	B	20030320	(200329)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 994354	A1	EP 1999-119058	19990930
AU 9953580	A	AU 1999-53580	19991011
JP 2000121443	A	JP 1999-289425	19991012
CA 2281159	A1	CA 1999-2281159	19990825
US 6180409	B1	US 1998-170270	19981013
AU 758263	B	AU 1999-53580	19991011

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 758263	B Previous Publ.	AU 9953580

PRIORITY APPLN. INFO: US 1998-170270 19981013

AN 2000-285028 [25] WPIDS

AB EP 994354 A UPAB: 20000524

NOVELTY - An apparatus for inspecting a **reagent strip** (14) having reagent pads (26), after the strip has been contacted with a fluid sample, is new.

DETAILED DESCRIPTION - The apparatus comprises a conveyor system (80), to move the strip between inspection locations, and readheads (60,62) associated with an inspection location, and adapted to **optically** inspect the reagent pads. The readhead has a light source, and detector (64 and 66, 68 and 70), adapted to illuminate the pads and detect light from them when the **reagent strip** is present.

INDEPENDENT CLAIMS are also included for the following:

(1) an apparatus of the novelty, where the readheads read different **reagent strips**;

(2) an apparatus of (1), which further comprises a readhead positioning system coupled to the readheads, and adapted to selectively position the first readhead to sequentially inspect reagent pads of the first strip, and to position the second readhead to inspect pads of the second strip; and

(3) an automatic method of processing a **reagent strip**, after it has been contacted with a fluid sample, comprising

(a) automatically moving the strip to an inspection location;

(b) positioning a readhead relative to the strip;

(c) detecting light received from the strip, while the strip is illuminated;

(d) storing signals relating to the amount of light detected, in a **memory**;

(e) automatically moving the strip to a second inspection location; and

(f) repeating steps (b)-(d).

USE - The apparatus is a **spectrophotometer** which is used to perform tests on body fluid samples, e.g. to analyze urine, where each of the reagent pads has a reagent which changes color in response to a urine constituent, such as leukocytes or red blood cells.

ADVANTAGE - None given.

DESCRIPTION OF DRAWING(S) - The diagram shows a perspective view of the internal mechanical portion of the spectrophotometric apparatus.

Readheads 60, 62

Positioning system 52, 54, 56

Light emitting diodes 30 a-e

Light detectors 32

Pivot arm 34
 Rotatable shaft 36
 Positioning mechanism 100
 Motor driven actuators 110, 112.
 Dwg.2/13

L26 ANSWER 44 OF 49 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1999-494924 [42] WPIDS
 DOC. NO. NON-CPI: N2000-219929
 DOC. NO. CPI: C2000-088773
 TITLE: Highly sensitive amperometric sensor for determination of
glucose in aqueous media.
 DERWENT CLASS: A96 B04 D16 J04 S03
 INVENTOR(S): DINGLI G, SHIEH P, GOLDBERG, E.; GOLDBERG, E; GUO, D;
 SHIEH, P
 PATENT ASSIGNEE(S): (BIOM-N) BIOMEDIX INC USA; (BIOM-N) BIOMEDIX INC
 COUNTRY COUNT: 2
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
CN 1219676	A	19990616	(199942)*		1
US 6033866	A	20000307	(200026)B		16

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
CN 1219676	A	CN 1998-123464	19981027
US 6033866	A	US 1997-986974	19971208

PRIORITY APPLN. INFO: US 1997-986974 19971208

AN 1999-494924 [42] WPIDS

AB US 6033866 A UPAB: 20000531 ABEQ treated as Basic
 NOVELTY - A novel highly sensitive amperometric sensor for determination of **glucose** in aqueous media is based on a two mediator-two enzyme redox system.

DETAILED DESCRIPTION - An amperometric sensor for determination of **glucose** in aqueous media comprises:

(a) a sensing electrode comprising a non-conductive support member comprising a non-conductive polymeric film coated with an electrically conductive layer containing a redox mediator;

(b) a reference electrode comprising a non-conductive polymeric film coated with an electrically conductive formation comprising Ag/AgCl dispersed in a resin formulation, with the reference electrode having an opening; and

(c) a **reagent strip** comprising a carrier strip that is a porous or fibrous water absorbent matrix, impregnated with a mixture of **glucose** oxidase, horseradish peroxidase, a redox mediator (that can be **oxidized** by hydrogen peroxide under catalysis by horseradish peroxidase), at least 1 surfactant, at least 1 stabilizer and a buffering agent (pH 4-8);

where the electrically conducting surfaces of (a) and (b) face each other; with the **reagent strip** superimposed on and in physical contact with the electrically conducting layer of (a), and with (b) superimposed on the **reagent strip** so that the electrically conductive formulation coating of (b) is superimposed on the **reagent strip** and in physical contact with the **reagent strip**; forming a sandwich of (a), (c) and (b).

An INDEPENDENT CLAIM is included for the use of the sensor for assaying **glucose** in a **whole blood** sample, by introducing the sample into the opening of the reference electrode; maintaining a potential of -80 to -125 mV across the sensing electrode and the reference electrode; and comparing the current measured to a calibration curve of the concentration of **glucose** versus current at the potential used.

USE - The sensor is useful for determination of **glucose** in biological fluids.

Dwg.0/7

AB CN 1219676 A UPAB: 20000606

NOVELTY - A novel highly sensitive amperometric sensor for determination of **glucose** in aqueous media is based on a two mediator-two enzyme redox system.

DETAILED DESCRIPTION - An amperometric sensor for determination of **glucose** in aqueous media comprises:

(a) a sensing electrode comprising a non-conductive support member comprising a non-conductive polymeric film coated with an electrically conductive layer containing a redox mediator;

(b) a reference electrode comprising a non-conductive polymeric film coated with an electrically conductive formation comprising Ag/AgCl dispersed in a resin formulation, with the reference electrode having an opening; and

(c) a **reagent strip** comprising a carrier strip that is a porous or fibrous water absorbent matrix, impregnated with a mixture of **glucose** oxidase, horseradish peroxidase, a redox mediator (that can be **oxidized** by hydrogen peroxide under catalysis by horseradish peroxidase), at least 1 surfactant, at least 1 stabilizer and a buffering agent (pH 4-8);

where the electrically conducting surfaces of (a) and (b) face each other; with the **reagent strip** superimposed on and in physical contact with the electrically conducting layer of (a), and with (b) superimposed on the **reagent strip** so that the electrically conductive formulation coating of (b) is superimposed on the **reagent strip** and in physical contact with the **reagent strip**; forming a sandwich of (a), (c) and (b).

An INDEPENDENT CLAIM is included for the use of the sensor for assaying **glucose** in a **whole blood** sample, by introducing the sample into the opening of the reference electrode; maintaining a potential of -80 to -125 mV across the sensing electrode and the reference electrode; and comparing the current measured to a calibration curve of the concentration of **glucose** versus current at the potential used.

USE - The sensor is useful for determination of **glucose** in biological fluids.

Dwg.0/7

L26 ANSWER 45 OF 49 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1997-557482 [51] WPIDS
TITLE: Reagent test strip for blood **glucose**
determination - comprises **optical** means for
detecting light intensity, useful for determining
glucose concentration in **whole**
blood samples.
DERWENT CLASS: A96 B04 D16 J04 S03
INVENTOR(S): SMITH, J L
PATENT ASSIGNEE(S): (LIFE-N) LIFESCAN INC; (JOHJ) JOHNSON & JOHNSON
COUNTRY COUNT: 26
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
NO 9701514	A	19971006	(199751)*		
EP 800082	A2	19971008	(199751)B	EN	8
R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE					
JP 10031024	A	19980203	(199815)		7
CA 2201571	A	19971004	(199817)		
US 5753452	A	19980519	(199827)		
KR 97071006	A	19971107	(199845)		
SG 55889	A1	19990118	(199930)		
MX 9702503	A1	19980401	(200004)		
IL 120586	A	20001031	(200059)		
MX 204580	B	20011008	(200246)		
EP 800082	B1	20020814	(200255)	EN	
R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE					
DE 69714637	E	20020919	(200269)		
ES 2181991	T3	20030301	(200322)		
CN 1171553	A	19980128	(200328)		
TW 507076	A	20021021	(200341)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
NO 9701514	A	NO 1997-1514	19970403
EP 800082	A2	EP 1997-302306	19970403
JP 10031024	A	JP 1997-99565	19970403
CA 2201571	A	CA 1997-2201571	19970402
US 5753452	A	US 1996-627630	19960404
KR 97071006	A	KR 1997-12450	19970404
SG 55889	A1	SG 1997-1044	19970404
MX 9702503	A1	MX 1997-2503	19970404
IL 120586	A	IL 1997-120586	19970401
MX 204580	B	MX 1997-2503	19970404
EP 800082	B1	EP 1997-302306	19970403
DE 69714637	E	DE 1997-614637	19970403
		EP 1997-302306	19970403
ES 2181991	T3	EP 1997-302306	19970403
CN 1171553	A	CN 1997-111674	19970404
TW 507076	A	TW 1997-108373	19970617

FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 69714637	E Based on	EP 800082
ES 2181991	T3 Based on	EP 800082

PRIORITY APPLN. INFO: US 1996-627630 19960404

AN 1997-557482 [51] WPIDS

AB EP 800082 A UPAB: 19971222 ABEQ treated as Basic
 Reagent test strip for use in an apparatus for determining the concentration of **glucose** in a sample of **whole blood**, where the apparatus comprises **optical** means for detecting intensity of light at wavelengths of about 635 and 700 nm reflected from at least 1 portion of a matrix disposed near one end of the strip, which matrix comprises: a) a sample receiving surface for receiving the **whole blood** sample and passing a portion of it toward a testing surface opposite, where the testing surface has a reflectance at about 700 nm which, when the testing surface becomes wet,

undergoes a change that is equivalent to that produced by the absorbance of haemoglobin in blood; b) a structure that selectively retards the passage of red blood cells through the matrix and minimises the lysing of the cells in the matrix, where any portion of the sample that is visible from the testing surface does not absorb light to any appreciable extent at about 700 nm, and c) a reagent for indicating the **glucose** concentration by creating at the testing surface a change in reflectance at about 635 nm.

USE - The **reagent strip** is used in a "One Touch" (RTM) blood **glucose meter**.

ADVANTAGE - Since the structure of the strip selectively retards the passage of red blood cells through the matrix and minimises their lysis, the **glucose** determination is relatively independent of the haematocrit of the blood sample. The change in reflectance at 700 nm simulates the effect of blood colour.

Dwg.1/1

L26 ANSWER 46 OF 49 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1992-065095 [08] WPIDS
 DOC. NO. NON-CPI: N1992-048941
 TITLE: Apparatus for recording reagent test strip data - uses series of level lights and photodetector to record reagent test strip data on computer.
 DERWENT CLASS: S05 T01
 INVENTOR(S): COOPER, T G; MACHA, E S; SMITH, R E; COOPER, T; MACHA, E; SMITH, R
 PATENT ASSIGNEE(S): (HEAL-N) HEALTHDYNE INC
 COUNTRY COUNT: 15
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9201989	A	19920206	(199208)*		
RW: AT BE CH DE DK ES FR GB GR IT LU NL SE					
W: JP					
US 5182707	A	19930126	(199307)		11

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 5182707	A	US 1990-558062	19900723

PRIORITY APPLN. INFO: US 1990-558062 19900723

AN 1992-065095 [08] WPIDS

AB WO 9201989 A UPAB: 19931006

The appts. has a panel member including a colour chart area which has a number of colour groups. Each colour group corresps. to different colour blocks of a developed **reagent strip**. Two or more sets of a number of visually distinguishable colour spots are contained of the panel member for testing a number of different **parameters**.

A number of lights are located adjacent to a different colour spot, a cavity or space adjacent groups of colour spots. An **optical** detector is used for detecting the presence of the **reagent strip** positioned in the space. A microcomputer is used to record and store the test results.

USE/ADVANTAGE - For recording analysis of **reagent strip** having number of colour blocks for testing different **parameters**. Provides visual readout or printout capability.

1/3

ABEQ US 5182707 A UPAB: 19931006

The apparatus comprises a reference panel having visually distinguishable and calibrated colour areas or spots, first lights for designating the testing of a different constituent or **parameter**, second lights each located adjacent a different colour spot and a cavity or space adjacent groups of colour spots. An **optical** detector senses the presence of the **reagent strip** positioned in the space.

A microcomputer records and stores test results and directs sequential testing of the different **parameters** for turning the lights on and off during the sequential testing. The apparatus includes switches for signalling the microcomputer to record and store the test data and for turning the apparatus on and off.

USE - For recording analysis of reagent test strip having colour blocks for testing different constituents.

1/3

L26 ANSWER 47 OF 49 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 1991-067222 [10] WPIDS
 CROSS REFERENCE: 1996-435778 [44]; 1997-147570 [14]; 1997-235179 [21];
 1998-147239 [14]; 1998-350262 [31]
 DOC. NO. NON-CPI: N1991-052006
 DOC. NO. CPI: C1991-028414
 TITLE: **Reagent strip** for determin. of analyte
 in **whole blood** - comprising matrix
 impregnated with separating reagent and test reagent.
 DERWENT CLASS: A89 B04 D16 S03
 INVENTOR(S): KISER, E J; RICE, E G; TOMASCO, M F
 PATENT ASSIGNEE(S): (LIFE-N) LIFESCAN INC
 COUNTRY COUNT: 12
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 415679	A	19910306	(199110)*		10
R: AT BE CH DE ES FR GB IT LI LU NL SE					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 415679	A	EP 1990-309344	19900824

PRIORITY APPLN. INFO: US 1989-399055 19890828

AN 1991-067222 [10] WPIDS
 CR 1996-435778 [44]; 1997-147570 [14]; 1997-235179 [21]; 1998-147239 [14];
 1998-350262 [31]

AB EP 415679 A UPAB: 19990902

A **reagent strip** comprises a matrix impregnated with a separating reagent (I) and a test reagent (II). The matrix has a thickness which is capable of passing a sample of **whole blood**.

(I) is capable of separating from the **whole blood** a clear component fluid containing an analyte. (II) is capable of reacting with the analyte in the clear component fluid to vary the colouration of the matrix dependent upon the level of the analyte in the **whole blood** sample.

(I) may be e.g. polyvinyl alcohol, polyvinyl sulphonic acid, polyethylene glycol, polystyrene sulphonic acid, hydroxypropyl cellulose, PVP or polyacrylic acid. (II) may be (a) 3-methyl- 2-benzothiazolinone

hydrazone hydrochloride (MBTH) with 3-dimethylaminobenzoic acid or 3,5-dichloro-2-hydroxybenzene sulphonic acid, (b) 4-aminoantipyrine (4-AAP) with 5-oxo-(p-sulphophenyl)-2-pyrazoline -3-carboxylic acid, 4-methoxy-naphthol or N-(m-tolyl)-diethanolamine, etc.

The matrix material may be e.g. polyester, polyamide, polyolefin, polysulphone or cellulosic. The **reagent strip** may also contain **glucose** oxidase and horseradish peroxidase.

USE/ADVANTAGE - The **reagent strip** can be used with an unmeasured drop of **whole blood** to rapidly and reliably determine levels of analyte, e.g. **glucose**, cholesterol or alcohol.

Dwg.3/5

ABEQ US 5418142 A UPAB: 19950705

Reagent test strip comprises a porous matrix (PM) having an internal surface which defines pores, carrying a test reagent (TR) and sepg. coating (SC), overlying and affixed to at least a portion of an elongated support at one end. A porous disc overlies and is fixed to the support at the opposite end.

PM is capable of passing a sample of **whole blood**, SC separates a clear fluid contg. **glucose** from the blood and TR is capable of reacting with the analyte of the clear fluid to vary colouration of the matrix dependent on level of analyte in the blood. An unmeasured blood sample is placed on the porous disc and the support is manipulated to bring a portion of the disc into contact with the matrix. The side of the matrix facing away from the disc can be visualised.

USE - The prod. is used as a visual or **meter** test device for e.g. **glucose** cholesterol or alcohol levels in **whole blood**.

Dwg.4/5

L26 ANSWER 48 OF 49 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1990-108477 [15] WPIDS
 DOC. NO. NON-CPI: N1990-083908
 TITLE: **Photometer** measuring remission properties of **reagent strips** - uses calibration standard of electrically variable intensity for rapid accurate recalibration.
 DERWENT CLASS: S03
 INVENTOR(S): EICHHAMMER, D; GROSSE, R; HOFMANNREI, H; MIERDORF, Z
 PATENT ASSIGNEE(S): (LRER-N) LRE RELAIS & ELEKTRONIK GMBH
 COUNTRY COUNT: 1
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 3833303	A	19900405	(199015)*		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 3833303	A	DE 1988-3833303	19880930

PRIORITY APPLN. INFO: DE 1988-3833303 19880930

AN 1990-108477 [15] WPIDS

AB DE 3833303 A UPAB: 19930928

The **photometer** has a light source (10), a light receiver arrangement (16) connected to an evaluation and display device (20,22) and a specimen holder (12) placed in the light path between the light source

and light receiver. A calibration standard (14,20) of electronically variable intensity can be placed in the beam path.

The calibration standard is an **electrooptical** component whose transmission or remission characteristic is controllable by electrical signals. It can be in the form of a liquid crystal display element. The surface of the **electrooptical** component lying in the beam path forms the support for a **reagent strip**.

USE/ADVANTAGE - Measuring remission properties of chemical **reagent strips**, especially medical test strips. Enables necessary recalibrations to be performed quickly, conveniently and accurately.

1/1

L26 ANSWER 49 OF 49 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1990-000023 [01] WPIDS
 CROSS REFERENCE: 1988-051552 [08]; 1992-073742 [10]; 1992-116149 [15];
 1995-201974 [27]; 1998-055154 [06]; 2000-015440 [02]
 DOC. NO. NON-CPI: N1990-000067
 DOC. NO. CPI: C1990-000036
 TITLE: **Reagent strip** for reflectance
 measurement of **glucose** in **whole**
blood - comprises hydrophilic matrix impregnated
 with colour forming system attached to handling tab.
 B04 P31 S03
 DERWENT CLASS:
 INVENTOR(S): JURIK, F A; MCGARRAUGH, G; PHILLIPS, R; UNDERWOOD, R D
 PATENT ASSIGNEE(S): (LIFE-N) LIFESCAN INC; (JURI-I) JURIK F A; (MCGA-I)
 MCGARRAUGH G; (PHIL-I) PHILLIPS R; (UNDE-I) UNDERWOOD R D
 COUNTRY COUNT: 6
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
AU 8933757	A	19891102	(199001)*		67
DK 8902042	A	19891029	(199002)		
PT 90386	A	19891110	(199004)		
JP 01318963	A	19891225	(199006)		
US 5179005	A	19930112	(199305)		23
US 5304468	A	19940419	(199415)		23
US 5426032	A	19950620	(199530)		29
CA 1337682	C	19951205	(199610)		
US 5563042	A	19961008	(199646)		21
US 5843692	A	19981201	(199904)		
US 5968760	A	19991019	(199950)		
US 6268162	B1	20010731	(200146)		
US 2001019831	A1	20010906	(200154)		
US 6489133	B2	20021203	(200301)		
US 2003054427	A1	20030320	(200323)		
US 2003073151	A1	20030417	(200329)		
US 2003073152	A1	20030417	(200329)		
US 2003073153	A1	20030417	(200329)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
AU 8933757	A	AU 1989-33757	19890426
JP 01318963	A	JP 1989-106077	19890427
US 5179005	A CIP of	US 1986-896418	19860813
		US 1988-187602	19880428
US 5304468	A CIP of	US 1986-896418	19860813

		Div ex	US 1988-187602	19880428
		Cont of	US 1992-819431	19920110
			US 1993-9179	19930126
US 5426032	A	CIP of	US 1986-896418	19860813
		Div ex	US 1988-187602	19880428
		Div ex	US 1992-819431	19920110
		Div ex	US 1993-6859	19930121
			US 1993-148055	19931105
CA 1337682	C		CA 1989-597857	19890426
US 5563042	A	CIP of	US 1986-896418	19860813
		Div ex	US 1988-187602	19880428
		Div ex	US 1992-819431	19920110
		Div ex	US 1993-6859	19930121
		Cont of	US 1993-148055	19931105
			US 1995-408064	19950321
US 5843692	A	CIP of	US 1986-896418	19860813
		Div ex	US 1988-187602	19880428
		Div ex	US 1992-819431	19920110
		Div ex	US 1993-6859	19930121
		Cont of	US 1993-148055	19931105
		Cont of	US 1995-408064	19950321
		Cont of	US 1996-691154	19960801
			US 1997-941868	19970930
US 5968760	A	CIP of	US 1986-896418	19860813
		Div ex	US 1988-187602	19880428
		Div ex	US 1992-819431	19920110
		Div ex	US 1993-6859	19930121
		Cont of	US 1993-148055	19931105
		Cont of	US 1995-408064	19950321
		Cont of	US 1996-691154	19960801
		Cont of	US 1997-941868	19970930
			US 1997-965745	19971107
US 6268162	B1	CIP of	US 1986-896418	19860813
		Div ex	US 1988-187602	19880428
		Div ex	US 1992-819431	19920110
		Div ex	US 1993-6859	19930121
		Cont of	US 1993-148055	19931105
		Cont of	US 1995-408064	19950321
		Cont of	US 1996-691154	19960801
		Cont of	US 1997-941868	19970930
		Cont of	US 1997-965745	19971107
			US 1999-323442	19990528
US 2001019831	A1	CIP of	US 1986-896418	19860813
		Div ex	US 1988-187602	19880428
		Div ex	US 1992-819431	19920110
		Div ex	US 1993-6859	19930121
		Cont of	US 1993-148055	19931105
		Cont of	US 1995-408064	19950321
		Cont of	US 1996-691154	19960801
		Cont of	US 1997-941868	19970930
		Cont of	US 1997-965745	19971107
		Div ex	US 1999-323442	19990528
			US 2001-784993	20010215
US 6489133	B2	CIP of	US 1986-896418	19860813
		Div ex	US 1988-187602	19880428
		Div ex	US 1992-819431	19920110
		Div ex	US 1993-6859	19930121
		Cont of	US 1993-148055	19931105
		Cont of	US 1995-408064	19950321
		Cont of	US 1996-691154	19960801

	Cont of	US 1997-941868	19970930
	Cont of	US 1997-965745	19971107
	Div ex	US 1999-323442	19990528
		US 2001-784993	20010215
US 2003054427 A1	CIP of	US 1986-896418	19860813
	Div ex	US 1988-187602	19880428
	Div ex	US 1992-819431	19920110
	Div ex	US 1993-6859	19930121
	Cont of	US 1993-148055	19931105
	Cont of	US 1995-408064	19950321
	Cont of	US 1996-691154	19960801
	Cont of	US 1997-941868	19970930
	Cont of	US 1997-965745	19971107
	Div ex	US 1999-323442	19990528
	Cont of	US 2001-784993	20010215
		US 2002-179045	20020923
US 2003073151 A1	CIP of	US 1986-896418	19860813
	Div ex	US 1988-187602	19880428
	Div ex	US 1992-819431	19920110
	Div ex	US 1993-6859	19930121
	Cont of	US 1993-148055	19931105
	Cont of	US 1995-408064	19950321
	Cont of	US 1996-691154	19960801
	Cont of	US 1997-941868	19970930
	Cont of	US 1997-965745	19971107
	Div ex	US 1999-323442	19990528
	Cont of	US 2001-784993	20010215
		US 2002-179004	20020624
US 2003073152 A1	CIP of	US 1986-896418	19860813
	Div ex	US 1988-187602	19880428
	Div ex	US 1992-819431	19920110
	Div ex	US 1993-6859	19930121
	Cont of	US 1993-148055	19931105
	Cont of	US 1995-408064	19950321
	Cont of	US 1996-691154	19960801
	Cont of	US 1997-941868	19970930
	Cont of	US 1997-965745	19971107
	Div ex	US 1999-323442	19990528
	Cont of	US 2001-784993	20010215
		US 2002-179064	20020624
US 2003073153 A1	CIP of	US 1986-896418	19860813
	Div ex	US 1988-187602	19880428
	Div ex	US 1992-819431	19920110
	Div ex	US 1993-6859	19930121
	Cont of	US 1993-148055	19931105
	Cont of	US 1995-408064	19950321
	Cont of	US 1996-691154	19960801
	Cont of	US 1997-941868	19970930
	Cont of	US 1997-965745	19971107
	Div ex	US 1999-323442	19990528
	Cont of	US 2001-784993	20010215
		US 2002-179140	20020624

FILING DETAILS:

PATENT NO	KIND		PATENT NO
US 5179005	A	CIP of	US 4935346
US 5304468	A	CIP of	US 4935346
		Div ex	US 5179005

US 5426032	A	CIP of	US 4935346
		Div ex	US 5179005
US 5563042	A	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
US 5843692	A	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
US 5968760	A	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692
US 6268162	B1	CIP of	US 4935316
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692
		Cont of	US 5968760
US 2001019831	A1	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692
		Cont of	US 5968760
US 6489133	B2	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692
		Cont of	US 5968760
		Div ex	US 6268162
US 2003054427	A1	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692
		Cont of	US 5968760
		Div ex	US 6268162
		Cont of	US 6489133
US 2003073151	A1	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692
		Cont of	US 5968760
		Div ex	US 6268162
US 2003073152	A1	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692
		Cont of	US 5968760
		Div ex	US 6268162
US 2003073153	A1	CIP of	US 4935346
		Div ex	US 5179005
		Cont of	US 5426032
		Cont of	US 5563042
		Cont of	US 5843692

Cont of US 5968760
Div ex US 6268162

PRIORITY APPLN. INFO: US 1988-187602 19880428; US 1986-896418
19860813; US 1992-819431 19920110; US 1993-9179
19930126; US 1993-6859 19930121; US
1993-148055 19931105; US 1995-408064
19950321; US 1996-691154 19960801; US
1997-941868 19970930; US 1997-965745
19971107; US 1999-323442 19990528; US
2001-784993 20010215; US 2002-179045
20020923; US 2002-179004 20020624; US
2002-179064 20020624; US 2002-179140 20020624

AN 1990-000023 [01] WPIDS
CR 1988-051552 [08]; 1992-073742 [10]; 1992-116149 [15]; 1995-201974 [27];
1998-055154 [06]; 2000-015440 [02]
AB AU 8933757 A UPAB: 20030505

Reagent strip for measuring **glucose** in whole blood and for use in a reflectance reading appts., comprises a porous matrix which includes a signal-producing system, plus a tab, attached to the matrix for handling it after application of the test sample.

Pref. the tab includes a thin rectangular plate on either side of a central hole (2-100 mm diameter), one of the ends of the plate having a notch about halfway along it. The matrix is a porous hydrophilic membrane with 2 smooth sides, are attached to the tab at the central hole. This membrane has pores of size 0.6-1 micron and is impregnated with a dye-forming solution (pH below 4.8 in 10% citrate which contains **glucose** oxidase (GOD), peroxidase (POD) and a MBTH-DMAB indicator.

USE/ADVANTAGE - These strips provide a rapid, simple and reliable assay of **glucose** without separation of blood into its components and without needing to remove any excess liquid from the strip.
Dwg. 0/4

ABEQ US 5179005 A UPAB: 19930928
Determn. of **glucose** in a blood sample uses a membrane and a signal producing system which reacts with **glucose** to produce a light absorptive dye prod. and is bound to the membrane. The amt. of the dye prod. is determined using a reflectance measurement from a surface of the membrane.

The method comprises (a) applying an unmeasured blood sample to a 1st porous, hydrophilic membrane having pores of a sufficient size so as to exclude red blood cells, and which contains a signal producing system; (b) placing the matrix in a reflectance scanner **meter** which detects the presence of the blood sample on the matrix, the reflectance scanning **meter** initiating a timing sequence on detection of presence of blood sample; and (c) taking reflectance measurements from the background with the **meter** (Rb); before the matrix contains blood (Rdy); and at a predetermined time (Rt) and computing R't such that R't is $(Rt - Rb) / (Rdy - Rb)$ and using R't to compute K/S-t (where K/S-t is $(1 - R't) / (2 \times R't)$) and computing **glucose** levels from this value.

USE/ADVANTAGE - Partic. suitable for the measurement of **glucose** levels in blood without requiring sepn. of red blood cells from serum or plasma.

1/7

ABEQ US 5304468 A UPAB: 19940531
The **glucose** concn. in a sample of whole blood is determined using an **optical** device to detect the intensity of light at 635 nm and at 700 nm reflected from a portion of a test strip. The test strip comprises a) a porous portion with a sample receiving surface and a testing surface and b) reagent indicating the concn. of

glucose in the sample in presence of **optically** visible hemoglobin by causing a change of reflectance at the testing surface. The reagent is a dye precursor forming a chromophore indicating the concn. of **glucose** in the sample and absorbing light at 635 nm and very little at 700 nm.

Pref. the dye precursor pref. comprises 3-Me-2-benzothiazoline hydrazone HCl and 3-dimethylamino benzoic acid. The chemical reagent is at pH 3.8-5.

USE/ADVANTAGE - Used for the colorimetric detection of (bio)chemical components in aq. fluids, esp. **whole blood**. Red blood cells do not have to be removed from serum or plasma. Excess liq. does not have to be removed from the testing surface.

Dwg.2/7

ABEQ US 5426032 A UPAB: 19950804

Whole blood glucose test strip for measuring **glucose** in an unmeasured **whole blood** sample, comprises a porous, hydrophilic matrix. The test strip is used in a reflectance reading appts. which measures reflectance about 635 nm and about 700 nm. The matrix has a surface to receive the sample on 1 side of the matrix and a testing surface from which diffuse reflected light is measurable. The testing surface is opposite to the sample receiving surface. The matrix is reflective in the absence of applied sample. The matrix contains openings having a site to allow the flow of at least a part of the sample through the matrix from the sample receiving surface to the testing surface. The matrix comprises a reagent means for chemical reacting with **glucose** to give a change of reflectance in the presence of **optically** visible haemoglobin observable from the testing surface. The change indicates the concn. of **glucose** in the sample. The reagent means comprises **glucose** oxidase, peroxidase and dye precursor comprising 3-dimethylaminobenzoic acid or 3-methyl-2-benzothiazolinone hydrazone hydrochloride. Pref. the reagent means has a pH of 3.8-5. The pH is provided by a buffer comprising 5-15, esp. 10 wt.% citrate buffer.

ADVANTAGE - **Glucose** is measured without interference from the blood.

Dwg.2/7

ABEQ US 5563042 A UPAB: 19961115

A **whole blood glucose** test strip for measuring a concentration of **glucose** in an unmeasured **whole blood** sample which does not require removal of excess sample, the test strip being adapted for use in a reflectance reading apparatus which measures reflectance at about 635 nm and about 700 nm, the test strip comprising: a handle having an aperture defined in it; and a porous, hydrophilic matrix disposed over the aperture such that one surface of the matrix is exposed to atmosphere adjacent to one side of the strip and the other surface of the matrix is exposed to atmosphere on the other side of the strip through the aperture, one of the surfaces being an upper sample receiving surface adapted to receive the **whole blood** sample on one side of the matrix and the second of the surfaces being a lower testing surface from which diffuse reflected light is measurable, the testing surface being opposite to the sample receiving surface,

said matrix allowing at least a portion of the blood sample to penetrate through the matrix from the sample receiving surface to the testing surface, allowing blood colour of the blood sample to be observed from the testing surface, and filtering out red blood cells such that they do not reach the testing surface, said matrix comprising reagent means for chemically reacting with **glucose** to create a change in reflectance which change is indicative of the concentration of **glucose** present in the sample, whereby upon application of the

unmeasured **whole blood** sample to the sample receiving surface, the sample will penetrate through the matrix sufficiently to allow the change in reflectance to be determined from the testing surface.
Dwg.0/9

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L6 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:96415 HCAPLUS
DOCUMENT NUMBER: 138:133436
TITLE: Methods and devices for use in **analyte**
concentration determination assays
INVENTOR(S): **Teodorczyk, Maria**; Shar, Mahesh;
O'hara, Timothy James
PATENT ASSIGNEE(S): Lifescan, Inc., USA
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1281960	A2	20030205	EP 2002-255254	20020726
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
US 2003036202	A1	20030220	US 2001-920263	20010801
JP 2003114214	A2	20030418	JP 2002-223326	20020731
CN 1421700	A	20030604	CN 2002-142581	20020731
PRIORITY APPLN. INFO.:			US 2001-920263	A 20010801
IC	ICM G01N033-48			
CC	9-1 (Biochemical Methods)			
ST	analyte concn detn reagent test strip; blood glucose detn reagent test strip			
IT	Electrochemical analysis (apparatus; methods and devices for use in analyte concentration determination assays)			
IT	Dissolution (control fluid free of agent slowing mediator; methods and devices for use in analyte concentration determination assays)			
IT	Analytical apparatus (electrochem.; methods and devices for use in analyte concentration determination assays)			
IT	Blood analysis Colorimetry Electrodes Fluids Measuring apparatus Optical sensors Oxidizing agents Samples (methods and devices for use in analyte concentration determination assays)			
IT	Reagents RL: ARG (Analytical reagent use); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses) (methods and devices for use in analyte concentration determination assays)			
IT	Computers (microprocessors; methods and devices for use in analyte concentration determination assays)			
IT	Analytical apparatus (test strips; methods and devices for use in analyte concentration determination assays)			

IT 7631-86-9, Aerosil 200, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(colloidal, in control fluid for colorimetric determination of blood
glucose;
methods and devices for use in **analyte** concentration determination assays)

IT 139-33-3, Disodium EDTA 532-32-1, Sodium benzoate 9003-20-7, Polyvinyl
acetate 54693-50-4, Dow B emulsion 123439-80-5
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(in control fluid for colorimetric determination of blood glucose; methods
and
devices for use in **analyte** concentration determination assays)

IT 99-76-3, Methyl paraben 498-23-7, Citraconic acid 7381-75-1,
Dipotassium citraconate 9004-54-0, Dextran T-500, analysis 25956-17-6
78491-02-8, Germall II 106392-12-5, Pluronic 25R2
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(in control fluid for electrochem. determination of blood glucose; methods
and
devices for use in **analyte** concentration determination assays)

IT 7732-18-5, Water, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(in control fluids for determination of blood glucose; methods and devices
for
use in **analyte** concentration determination assays)

IT 50-99-7, D-Glucose, analysis
RL: ANT (Analyte); ARU (Analytical role, unclassified); DGN (Diagnostic
use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(methods and devices for use in **analyte** concentration determination assays)

AB Methods and devices are provided for use in the determination of the
concentration of an
analyte in a sample. In the subject methods, a sample is
introduced to a reagent test strip, where the sample is either a test
fluid or a control fluid, where the control fluid is free of a mediator
dissoln. slowing component and an oxidizing agent when used with an
electrochem. **analyte** concentration determination assay. The concentration of
analyte in the sample is determined and the sample is identified as a
control fluid or a test fluid. Also provided are devices for determining the
concentration of an **analyte** in a sample, where the devices have a
sample identification element for identifying whether a sample is a
control or a test fluid. The subject methods and devices find use in a
variety of different applications, particularly in the determination of blood
glucose concns.